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I.

Dissertation

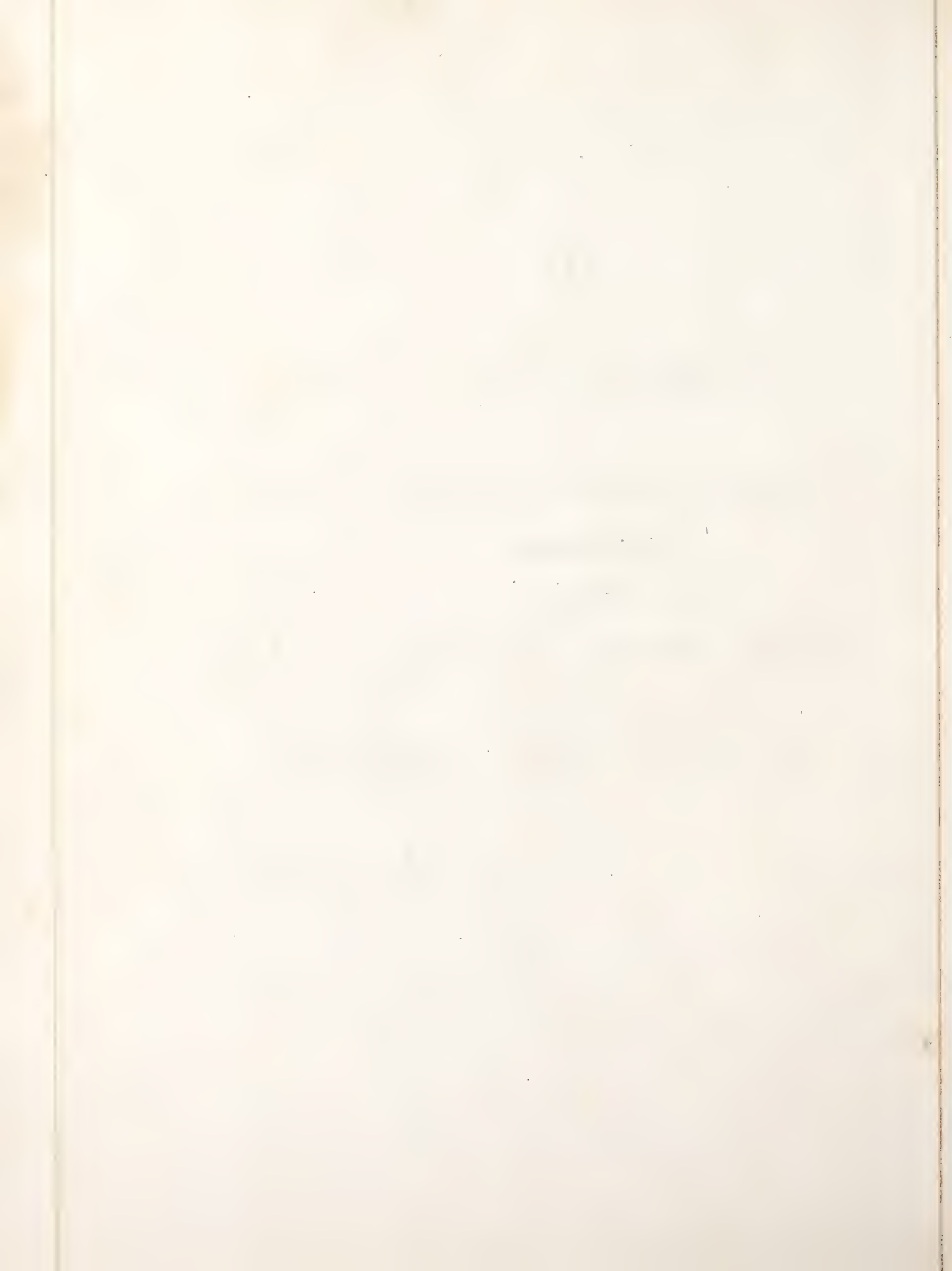
on

The Specific nature of Inflammation.

By

George Washington Benedict,
of Salisbury,

Candidate for a License.



The Specific nature of Inflammation

From the time of Hippocrates until the present moment, the theoretical views ^{regard} ~~in~~ to the nature of inflammation, have been as numerous and as varied as the authors who have written upon the subject, and perhaps there is no subject which has enlisted a greater number into the field of speculation than this. — It is true that previous to the period of the discovery of the circulation of the blood by Harvey, the opinions which were held on this subject underwent no material change, nor is this fact astonishing, when we recollect how limited were the opportunities which the ancients possessed for anatomical investigation, which essentially, is the true basis upon which an accurate medical knowledge is founded. — After this period however

which may be considered as forming an era in the medical science, the ancient doctrine of fluxion became gradually disipated, and a wider scope was given to the imagination, from which resulted theories far more numerous and plausible in their character.

It would be foreign to my purpose to enter into descriptions relative to the merits or demerits of the various hypotheses formed on the subjects of inflammatory action, suffice it to say they have all been refuted, and superseded by more modern writers, and are now looked upon as exhibitions of the ingenuity of their authors, rather than as conferring any real benefit upon mankind.

Before offering any remarks in regard to the nature of inflammation, let us observe its phenomena as laid down by writers, — Immediately after



the application of a stimulus, which is cap-
able of exciting inflammation, the globules
of blood are seen to move more rapidly
than usual, the currents are smaller in
consequence of a constricted state of the
small vessels, and there is an accelerated
flow of blood through them; But this
is soon succeeded by the opposite effects of
dilatation, — The motion in the vessels
most affected, is now slower than natural,
there is a general afflux of blood from
the surrounding parts to the point of
irritation, and a retrograde motion is
frequently observed, — At this time stagna-
tion and coagulation often supervene
and the globules are found to coalesce
into irregular and confused masses.

Such are the phenomena of incipi-
ent inflammation, and from these we
may infer that its physical characters
depend upon an undue accumulation
of blood in the capillary extremities of



the arteries, and that this unnatural determination is the result of a peculiar principle excited into action by some particular agent or exciting cause. The cases of rotas are termed "spontaneous inflammations" for which no physical cause can be ascribed cannot be considered as exceptions to this, for it is not reasonable to deny the existence of an exciting principle, any more than deny the existence of the disease, for it is incompatible with the known laws of nature, that the harmony of action within the animal economy, should become deranged without the existence of some morbid principle, adequate to the effect.

The essential nature or proximate cause of inflammation is always the same, consisting in a peculiar form of morbid action of the capillary blood vessels of the part; but not necessarily (as has been asserted by writers) either in diminished or increased action, for both these states may exist



not only in the different forms of inflammation, but in the different stages, either in the commencement or termination,

The varieties of inflammation and the various phenomena which it exhibits are all to be ascribed to difference in the exciting cause, in the character of the tissue affected and in the predisposition of the system,

This proposition will be considered more at large,

First, — The local determination of inflammation is influenced by the exciting cause, — In all specific diseases arising from visible causes there are certain phenomena present which indicate a tendency to local determinations in all constitutions,

No better illustration can be given of this principle than the specific action of various poisonous and medicinal substances; many of these in whatever manner they may have been introduced into the system whether by cutaneous absorption



by injection into the veins, or simply taken
into the stomach, exert a special influence
upon some particular organ, or set of organs.

Thus Castor oil acts especially upon the
alimentary-^{canal} Mercury upon the salivary
glands and skin - Tartar Emetic upon
the stomach - Nux. Vomica upon the spinal
marrow &c, In fact, there are comparative-
ly few remedial agents which do not
either directly or indirectly, exert some
influence upon some particular organ of
the ^{body}. "Indeed," says a late writer, "this knowledge
forms the very foundation of our practice."

The influence of cause, in determining
the locality of disease may be further evinced
by the regularity and similarity of the pheno-
mena, manifested in every variety of inflam-
matory disease. — The various poisons, ^{producing} contag-
ious diseases, excite specific inflammation
of the skin and mucous membranes as is
known to be the fact in regard to, Variola-
Scarlatina - Measles &c, — The inflammation



excited in the system by the absorption of virus, from denuded surfaces, derived from dead bodies, in all cases manifest a tendency to the erythematous type, and exerts its special action upon the cellular membranes.

Syphilis, throughout all its stages, exhibits in its more ^{prominent} characters, a certain degree of uniformity in all individuals labouring under it. — In the first stage there is almost universally an inflammatory affection of the mucous membranes of the throat and fauces; — In the second a peculiar tendency to the skin constituting the various syphilitic eruptions, and lastly the different bones and their periosteums become affected, causing nodes &c,

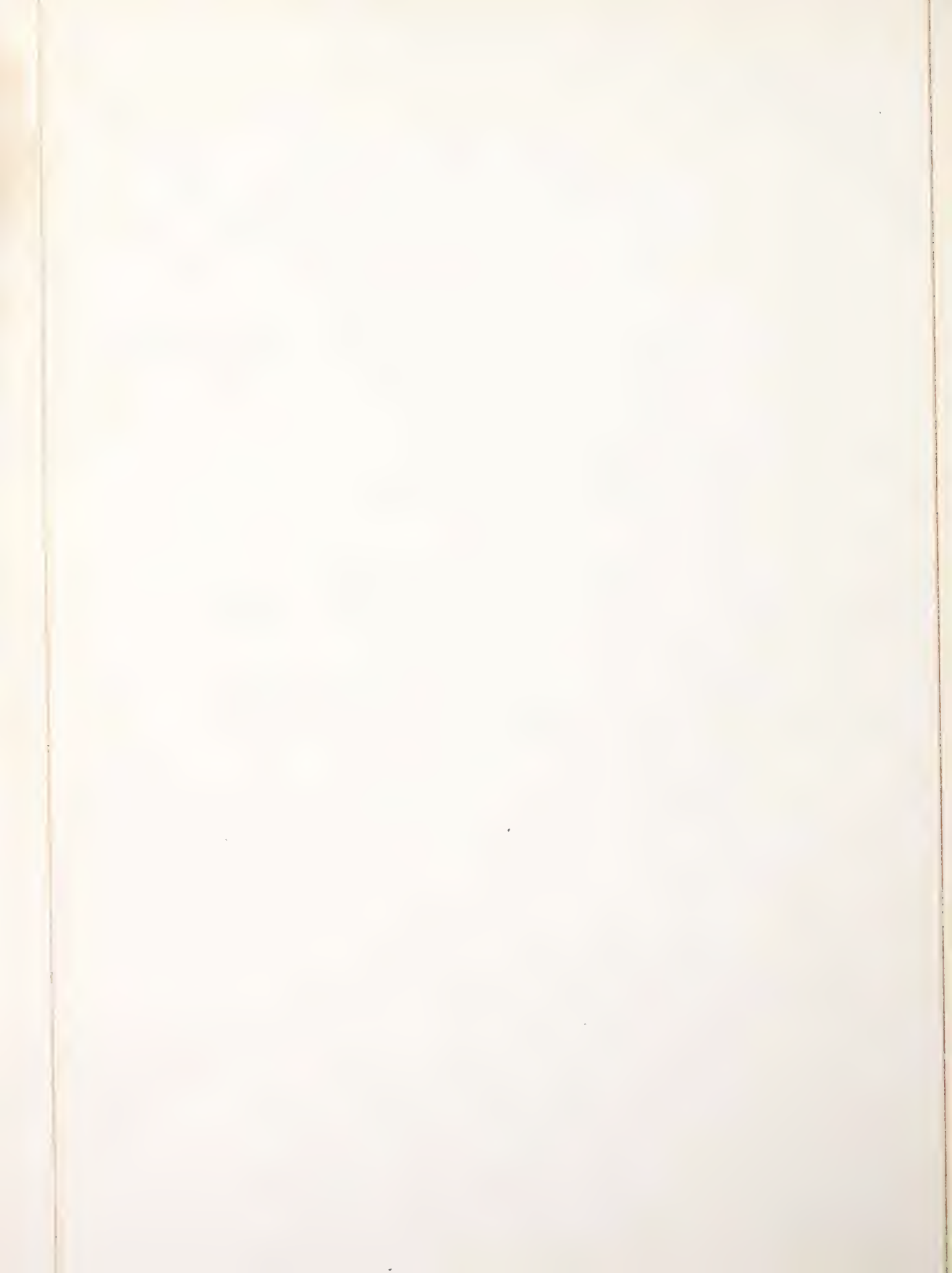
The various inflammatory affections having a rheumatic origin are especially directed to the serous and fibro-serous membranes, as the synovial membranes of the different joints, the external and internal lining membranes of the heart, — The morbid infection



derived from the glands in horses, received into the system either by inhalation, or by absorption from an abraded ^{surface} has a direct tendency to produce an inflammatory state of the nasal organs -

Thus we find in the above enumerated diseases a certain uniformity of character presented by each in all constitutions which cannot be considered as accidental -

Whatever may have been the manner of introduction into the system of the morbid exciting principle upon which the disease depends, or to whatever source it may owe locality of effect, whether by transpiration through the vascular, nervous, or absorbent systems, there is consequent to this principle a peculiarity of effect exhibited in one or more particular portions of the body, and a certain uniformity of action presented in all varieties of the disease depending upon this principle though necessarily modified by various circumstances -



Secondly.— The nature of inflammation is influenced by the character of the tissue affected — As each individual organ or tissue of the animal economy exercises certain powers, and performs certain functions peculiar to itself, in its healthy state, and as it maintains its own identity of character, notwithstanding the constant removal, and renewal of its constituent particles by the process of absorption and reproduction, we may reasonably conclude that in a diseased condition each of the tissues would present characters different from the others, and those bearing an inflammatory type of disease symptoms peculiar to themselves. — In reality upon the phenomena presented by the individual tissue or organ when diseased depends our system of diagnosis.

Besides the more prominent characters of inflammation, heat, pain, redness and swelling, which are present in some proportion in most varieties of the disease, there are

other characters peculiar to each tissue, which like the more prominent symptoms, are modified by the cause, intensity of the disease &c.

For instance, Inflammation of the serous and synovial membranes, is usually attended with more fever and pain in proportion to its extent - than that of the mucous membranes or parenchymatous tissues, and as a general rule shows a tendency to spread itself over a more extensive surface - The effusion resulting from inflammation of these membranes is of a peculiar kind, and undergoes important changes peculiar to itself - It is a sero-fibrous fluid, which by the absorption of its more limpid parts, becomes a concrete substance and by the extension of blood vessels into it of the adjoining membranes (causing occasionally adhesion of the opposing surfaces, it becomes a living organized tissue possessed of the same vital properties as the membrane from which it derives its nutriment. -

Inflammation of the mucous membranes

like the serous has a tendency to diffuse itself over a considerable surface, but differs materially in the nature of its secretions. - Although these membranes in certain cases secrete a fluid capable of forming a false membrane, as in the larynx and trachea in croup, and in the intestines in dysentery, yet in no cases do these false membranes become living tissues, or produce thickening or hardening of the membranes by which they are secreted - Also there is more variety in the effects of inflammation of the mucous, than of the serous membranes. - Thus, the mucous membranes of the bronchae and lungs when inflamed, are usually affected over a more extensive surface and are more subject to edema and effusions in the submucous tissues than of the lining membrane of the alimentary canal, which is more liable to become affected with numerous circumscribed ulcers as in the various inflammatory fevers - The mucous membranes of the urinary organs when

inflamed, manifest a peculiar tendency to purulent secretion, and like that of the air passages to degenerate from the acute, into the chronic form.

In inflammation of the cellular membranes and parenchymatous tissues when not terminating in what is commonly called "resolution"; there is a tendency to the deposition of lymph, and subsequently to the formation of circumscribed abscesses. This is the course of what is termed healthy inflammation in which there is presented a similarity of phenomena in these various substances. But there are other characters exhibited by the parenchymatous substances of different organs, when inflamed depending wholly upon the variety of tissue. Thus, the lungs are more particularly subject to tuberculous depositions - the kidneys to a peculiar granular affection; melanosis more frequently attacks the liver than other organs; the glands of the mammae, are usually the seat of peculiar carcinomatous diseases &c



The skin likewise when affected by the different inflammatory diseases, or becomes inflamed from any other cause, presents certain characters peculiar to itself—There is usually more pain and a greater disturbance of the cerebral functions during inflammation of the skin than of any of the other tissues, probably depending upon its more immediate connection with the nerves of sensation. The secretions which are serous or lymphatic have a tendency to the formation of vesicular eruptions and ultimately to the destruction of the cuticle.

As our principal means of diagnosis as before observed depends upon the phenomena presented by the particular tissues or organs when inflamed, it is often necessary to attend to certain symptoms, usually present termed "sympathetic", which have been divided into sensations and actions of sympathy. The first is referable generally to known nervous communication, as pain at the nervous extremities when inflamed at the trunk, or to continuity of tissue

as pain at the point of the urethra attending inflammation of the bladder. — The latter is supposed to depend upon a reflex action of the spinal marrow, and is illustrated by the convulsive action of the diaphragm and abdominal muscles, producing the vomiting which frequently attends inflammation of the brain, uterus, stomach &c and of the muscles of respiration, during inflammation of the mucous membranes of the air passages.

After the illustrations which have been given it needs no argument to prove that the specific nature of inflammation, is influenced by the tissue affected, or in other words that each individual tissue presents characters peculiar to itself. There are however certain modifications of these characters, which are probably dependent in all cases upon either the cause of the disease of which we have already spoken, or upon the predisposition of the system when under the influence of the disease which will form the subject of our last



remark in reference to the nature of inflammation — that there may and does exist in the constitutions of some individuals and in many cases for a considerable length of time, a predisposition to certain morbid actions, may be inferred from the fact, that the treatment of all diseases, has a particular reference to the condition of the constitution.

In all diseases termed hereditary there must exist within the constitution of the offspring, the peculiar diathesis inherited from the parent until the period of its development, which may be proved by its development being in many cases dependent upon some accidental exciting cause.

Inflammation when existing within a deranged ~~system~~ whether having a constitutional origin, or arising from external noxious agents, exhibits phenomena peculiar to the constitutional affection.

The scrofulous inflammation, though produced by the same exciting ^{cause} as the healthy

is slower in its action, produces less febrile
derangement, and is less influenced by anti-
phlogistic treatment. When external the
skin over the tumor is soft and flabby, the
suppuration is languid, consisting of a thin
watery pus mixed with fragments of the
consistence of soft cheese or lard; and frequ-
ently degenerates into foul intractable ul-
ceration. When internal there is a tendency
to the deposition of small granular bodies
called tubercles, which ultimately follow
the same general course as the external
affections. Inflammation attending constitutional
syphilis, carcinoma, and various other diseases
likewise presents characters peculiar to each
affection.

Thus we find that inflammation, throughout
all its varieties and complications, to a certain extent
preserves its identity of character.



II.

Dissertation

on

The character and duties of the Physician.

By

John Adams Betts,

of Brooklyn, N. Y.

Candidate for the Degree of Doctor in Medicine.

The character, & duties of a Physician.

The duties and responsibility attached to the office of a medical practitioner, are in their nature peculiarly interesting & important.

A physician may be estimated as an invaluable blessing, or as a curse to the community, as he alleviates, by his judgment and skill, the calamities of mankind, or by his ignorance and rashness, inflicts incalculable misery and sorrow.

Having in his hands a weapon of immense power, it is incumbent on him to wield it with the utmost judgment and discretion; as a single erroneous application may terminate the awful fate of the patient consigned to his charge. The man, therefore, who maintains this important station in society, should possess the strictest integrity of character.

Disinterested benevolence and philanthropy, should be interwoven in the constitution of his nature.

He should possess that modesty, and humanity, which melts at every distress, extending the hand

relief and comfort to the afflicted, especially to the widow, to the fatherless, and to him that hath none to help him". He should devote no less attention to the bed of helpless, pinching poverty, than to the sickly couch of wealth and luxury, and mingle a sympathizing tear with those, whether rich or poor, who are called to shed the tears of inconsolable sorrow. Whilst manifesting an ardent zeal and solicitude for the welfare of his patients, and devoting all the energy of his soul to their service and comfort, he is not to be actuated by the sordid motive of acquiring fame or emolument; but by the irresistible dictates of that tenderness and sympathy, which have their origin in the best feelings of the heart. To these qualities, should be added, an acute, penetrating genius, a retentive memory, intuitive discernment, and an intrepid and decided disposition of mind.

Although the character here portrayed, is of no ordinary cast, nor is it frequently exemplified; but such was the great Hippocrates; such was the pious and sagacious Sydenham; such the

illustrious and learned Boerhaave and Cullen;
and no less deserving the applause of mankind,
were those luminaries of American medicine, Bush,
Miller, Warren, Barton, and many others the pride &
ornaments of our own country.

They have left behind them memorials which can never
be forgotten; and such models, as are worthy of
imitation.

When we consider the great expense, and the time,
requisite to acquire a complete medical education,
and form the character of a physician worthy
the great trust reposed in him by all ranks of
society; when we reflect on his high responsibility,
and the painful solicitude of mind for the
fate of his patients; and the frequent exposure
of his own health and life, while devoting himself
to the services of others, it must be conceded, that
no class of people can have a stronger claim
to the respectful regards, and grateful remunera-
-tion of their employers.

Every practitioner, however, must calculate, in the
line of his profession, to be subjected to the severest

trials, not only of his skill and abilities, but of his
patience and constancy, He will, on some occasions,
be called to encounter the whims & caprices of his
patients and friends.

Their wavered confidence will sometimes be withdra-
wn; and his best services will be requited with
contumely and ingratitude.

the caprices of the sick may, to some extent, receive
indulgence, when no evil consequences can result
from it; but his address and forbearance should be
marked with that commendable independence and
firmness, which will neither sully his own charac-
ter, nor wound the dignity of his profession.

The condition of physicians in society is conspicuous,
honorable and dignified and their responsibility
consists, not only in the faithful discharge of
their immediate practical duties, but also in
co-acting with each other in the promotion of social
intercourse and professional urbanity; in directing
all their efforts to give respectability and order
to the practice of medicine, and to disconte-
nance the vile practice of unprincipled pretenses;

in contributing all in their power, to perfect the healing art, & disseminate its blessings to the community.

It should be the pride and ambition of every medical man, to maintain the respectability of their professional character:

They should reflect on their high responsibility, and that they are answerable to supreme power, for every capital error, resulting from ignorance, neglect, or inattention.

They should cultivate, with the greatest assiduity, the talents with which they are endowed, and a disposition to manifest their benevolence and sympathy, by consulting the comfort, interest and feelings of their afflicted patients, and administering with tender solicitude and a liberal hand, the healing balm of hope and consolation. Thus the miseries of man may often be lessened, and the groans of suffering humanity, happily allayed.

The physician should direct his particular attention to every circumstance, which relates to the cause, nature and cure of disease.

He should, especially, exert his endeavours to acquire an accurate knowledge of those, which are peculiar to the climate in which he resides, and of such as are usually prevalent at certain seasons, as every climate has a tendency to produce particular diseases, either from its excess of heat, or cold, or from other causes not perfectly comprehended.

Contagious and epidemic diseases should occupy a large share of the physician's attention, and, when these are prevalent, it will be incumbent on him to apprise the people of their danger, and to adopt, or recommend the most effectual method to prevent a more extensive communication of the disease.

Proper regulations respecting the articles of diet, air, cleanliness, and tranquillity of mind, should in all cases be enjoined, as of primary importance; without a due observance of which, the most judicious plans of medicine may be frustrated. These means of comfort and safety, are in the power of all, and physicians

should enforce, that prompt attention to them, which their well known usefulness and importance demands.

A physician, on the commencement of his functions, should not allow his mind to be enslaved by systems, nor to imbibe a bigoted attachment to great names, as there is no absolute perfection in systems, nor infallibility in the wisdom of man.

He is not to be implicitly guided by the doctrines, nor the practice of others, however eminent, but establish a course of practice, the result of actual facts, founded on knowledge, and repeated experience and observation.

In the exercise of practical duties, he will, or should, display a commendable candor and condescension, associating the moral virtues with professional duties,

He will avoid all appearance of vanity, and ostentation, manifesting, however, a modest confidence in his own merit, that he may command the confidence of others; for nothing

can be more unpleasant to a man to find
than to discover a want of confidence in his
judgment, and a ready acquiescence in his
medical prescriptions. In this he will ende-
avor to combine simplicity with elegance, as far
as may be consistent with the requirements of
the particular case. He will confide in a
few selected articles, judiciously adapted,
that the indications may be answered by as
few medicines as possible; avoiding that
sumptuous parade, so peculiarly characteristic
of the quack, and so disgusting to every intell-
-igent observer.

It is requisite that a physician should have
an absolute command over his patients; so
far, at least, as to prevent any deviation from
his rules and prescriptions, which ought,
however, in no case to be unnecessarily rigid
and minute.

It will often be justifiable, and even necessa-
-ry, to conceal the name, and to reduce
the medicine to a disguised form,

as invincible prejudices are frequently imbibed against certain remedies, which no reasoning can overcome, and a medicine covered with the veil of obscurity, is sometimes more valued than one openly and clearly explained.

The frequency of the physician's visits should, in every case, be regulated by his own sense of duty; his honor and delicacy being a sufficient pledge that they will not be unnecessarily multiplied and expensive.

In the chamber of the sick, no possible attention should be deemed superfluous; all the powers of his mind must be absorbed in the investigation of the case, nor should he permit the minutest circumstance to escape his observation.

A superficial, or cursory view of the patient, and a slight examination of the symptoms, will never satisfy the inquisitive and intelligent physician, nor inspire confidence in his skill and judgment.

He should be systematic in his examination and inquiries; recollecting that external

appearances, are often fallacious, and that many diseases exhibit symptoms similar and common to other diseases of a different nature.

The expressive countenance, the pulse, the tongue, respiration, perspiration, and all the secretions and excretions, with numerous other particulars in connection, must come into a critical review, in order to ascertain the character of the disease, and the indications of cure.

It is of some consequence to recollect that the presence of the physician seldom fails to excite a temporary perturbation, and, until this subsides, and the mind recovers its calmness and tranquillity, no correct indication can be inferred from the state of the pulse; a careful and repeated examination of which, will often be found of considerable importance in determining the nature and character of the disease.

Instances may occur in which a respectable and valuable member of society, perhaps

the head of a family, or the only child of child
of doting parents, affected with a fatal disease
may be confided to his care. While life and
death are poised on a delicate and acute
point, all the energies of his mind will be
called into exercise, and the keenest anxiety
and solicitude will await him in the
discharge of his official duty.

Here is an opportunity to display that
sympathy, and anxious attention, which
engage the affections and confidence of
the patient, and, in many instances, are
of the utmost importance to his recovery.

In all cases of a doubtful or dangerous
nature, where the physician cannot place
sufficient dependence upon his own judgment,
or when he finds that it would be a satisfac-
-tion to the patient or his friends, the counsel
of one or more skilful physician should be
requested.

By this he will relieve his own mind, and
increase the confidence and esteem of the

patient and friends. When a patient can enjoy the inexpressible comfort of recognizing in his physician, a kind and tender friend his visits will be anticipated and welcomed as those of a guardian angel ministering to his relief; while he who is callous to the sentiments of humanity, and sympathy, unfeeling, rough and blustering in his manners, will appear to the patient, like the messenger who comes to pronounce his awful doom.

The physician should not forsake the chamber of his patient, knowing that his presence is a constant source of consolation, and though he may be unable to cure, he may soothe, mitigate, and relieve,

He must not entrust the administration of medicine to unfaithful hands, but himself be the accurate observer of every effort of curative nature, and the effect of every medicine prescribed. The balm of hope, which buoy the mind above despair,

must never be abandoned or withheld, and the prognosis, when required, should be peculiarly cautious and guarded.

The signs of approaching death are often extremely fallacious, and when it is absolutely impracticable to ascertain the precise moment of despair, the conscientious physician will not yield his hope, until life shall have spun out its last attenuated thread.

Instances have sometimes occurred of wonderful recoveries after the physician had discontinued his attendance, from the belief that the agonies of expiring nature had actually ceased.

It has been alledged by some, that, in all cases of doubtful or obviously hazardous event, the danger ought to be carefully concealed from the patient and friends, as the slightest mental excitation, during the state of disease and debility might precipitate the fatal termination. Such indeed, is the incomprehensible union, and secret influence

of the faculties of the soul, over those of the body, that a false prognosis might have a considerable share in its own fulfilment.

Occasions may however, occur, in which a cautious disclosure of the impending event, will, both in a moral and religious point of view, be deemed highly expedient & proper. As the future peace and happiness of a family may depend on the arrangement of a patient's worldly affairs, it may be necessary to suggest, in the most prudent manner, the real danger, that this important duty may not be neglected.

As a man of sensibility, this is one of the most painful duties which he can be called to perform, but it is often indispensable, and requires great prudence, tenderness, and humanity.

It is undoubtedly necessary, in certain cases, to intimate the real danger to the relations of the patient, that opportunity may be afforded for calling in further medical assistance

if they should deem it proper; nor is it to be considered foreign to the office of a physician to suggest to his patient the propriety of an interview with a pious clergyman, that he may administer the consolations of that religion so admirably calculated to compose the anguish of the mind, by encouraging a hope beyond the grave.

Among the virtues peculiarly required in the character of a physician, are those of temperance, sobriety and honesty. Temperance is the only panacea known in medicine; and the professors of health should enforce their instructions of temperance, by the eloquence of example. Of all the disgusting objects ever admitted into a sick chamber a drunken physician is incomparably the most odious, and he who sustains this character, ought never to receive the least countenance in the line of his profession, but be treated with the utmost neglect.

New Haven

January, 1848.

John Adams Wells





III.

Dissertation
on
The Respiratory Nerves.

By
William Lathrop Bliss, M.A. West. Univ.
of New Haven,
Candidate for the Degree of Doctor in Medicine



The Respiratory Nerves

The Anatomy and functions of the Nervous system, have been far in the background compared with other Physiological investigations, owing in part perhaps to the minuteness of their organization, and the complex character of their derivations.

To Sir Charles Bell the world is indebted, for breaking the spell and scattering the darkness so long surrounding this important part of the Physical Economy; though the labors of Marshall Hall in enriching this branch of Medical Science cannot be



forgotten. True much remains yet to be explored, but with the beacon lights now burning up around us, so fully exhibiting the general principles, it is to be hoped the full development of this Department of Anatomical research will be accomplished.

The Nervous System appears to be unique in its operations. In the Sanguiferous System we find many irregularities and anomalies.

Blood vessels will suffer various innovations and accommodate themselves to almost any exigency; for if the continuity of parts be sundered and veins be lacerated and injured, by proper treatment they will soon repair the damage; and though the circulation be interrupted in some of the larger arteries even; the anastomosing branches will enlarge so that a requisite quantity of blood will be distributed to the parts. So also muscles may become atrophied and their functions be performed by others, partially at least. Not so with the nerves - if one be



of nerves are paralyzed no other class of nerves can perform their functions. A nerve of common sensation cannot perform the functions of special sense, though it may be distributed to the same organ.

In this system we have the Magnesian Telegraph hævi mundi of man. The brain or cerebral spinal axis being the center of operations or general Depot while the ganglions not unworthily represent the intermediate or sub stations; so that the commands from Head quarters are faithfully performed, though the lines may be extended to the most distant organs.

In the following remarks I shall confine myself chiefly to the respiratory nerves. There are two distinct systems given off from the spinal cord, one from the anterior, the other from the posterior segment - the former are for motion, the latter for sensation. The third or respiratory system of nerves arises from the side of the spinal cord in the course of the respiratory tract as it is called.

now are the Parasympathetic or Pneumogastric,
the Portio dura of the seventh or respiratory
nerve of the face, the superior respiratory of
the trunk also called spinal accessory, the
great internal respiratory or Phrenic, the ex-
ternal and globo pharyngeal nerves.

The Parasympathetic arises from the respiratory
tract by numerous filaments, making its
exit through the skull by the inner extremity
of the jugular foramen, passing down to the
larynx, lungs, heart, and stomach. The Facial
arises from the respiratory tract near to the
lower border of the same foramen, and by its
many windings, runs through the external
auditory and spreads itself on the face.

The spinal accessory passes off from the super-
rior part of the spinal marrow in a line
with the roots of the other respiratory nerves.
It does not pass over between the vertebrae like
the other spinal nerves but passes up directly
into the skull and coming out with the Pa-
rasympathetic runs down upon the muscles of the neck.

to those of the back. The Phrenic is formed
by branches from the third, fourth, and fifth
cervical, with the sixth branch of the spinal
trunk, and descends to the root of the neck,
resting on the scalenus anticus muscle; then
passes down through the middle mediastinum
between the pleura and pericardium to the dia-
phragm. The External Respirator has a similar
origin to the preceding running down the neck
it passes through the Axilla and spreads on the
muscles of the back. The Glottal Pharyngeal
arises by several filaments between the corpus
cleare and restiforme, and escapes from the
skull through the jugular foramen and is
distributed to the mucous membrane of the
Tongue and pharynx. All these nerves are
connected with muscles or parts concerned in
respiration in its various forms. In
gentle respiration there is but little motion
perceptible except a slight movement of the
cartilages of the larynx but in the breathing
become hurried and laborious, and the shoulders

are raised the muscles of the Throat and neck become tense, the nostrils are dilated the eyelids and brows are raised, the lips being kept in motion. The texture of the nerves of sensation though consisting of fibrous or white nervous tissue, as are the nerves in general, is found to be of a firmer nature, and the filaments more minute than those of some other sensation, and while the latter are very sensitive, the slightest touch causing pain, the former are almost or quite insensible.

The functions of the face are many and various. Here are assembled the organs of vision, smell, taste, deglutition and respiration, with many of which the Facial nerve is more or less connected. Laughing and crying are dependant on these respiratory nerves; for if it is paralyzed on one side of an individual, he laughs and cries only on the opposite side. So also if the Portio dura of a Dog be divided the sense of smell will be

nearly destroyed; and that this is the effect
of nerve, but an essential advantage,
for smelling is not simply drawing in
the breath; but the nostrils must be so ar-
ranged that the air containing the efflu-
via shall be directed to the base of the
olfactory nerve.

Having noticed the Tracheal system
we now refer to those of the class which are
more directly connected with the act of respi-
ration. There is a branch essential to animal
life. We know that crabs & our great ones
the insects that swarm in the summer sun
or a dog, have each its appropriate organs of
respiration, as well as the higher order of animals.

Respiration brings the air in contact with the
blood in such a manner that it becomes aera-
ted, removing the carbonic acid from the blood
while about an equal quantity of oxygen is
taken up, this changing venous into arterial
blood. The importance of this function may
be inferred by the wise arrangement of the



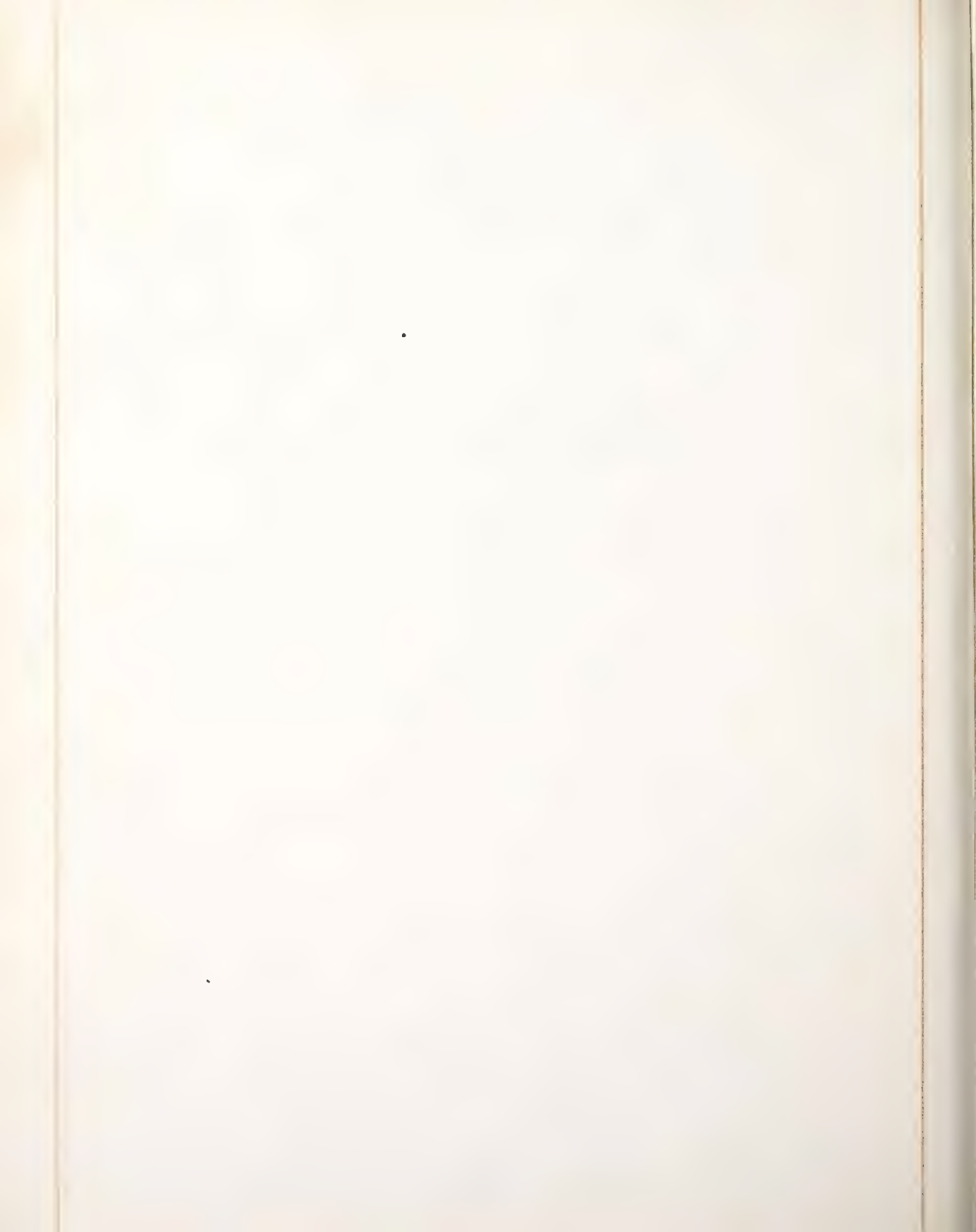
great secretaries in allowing it under the control
of involuntary nerves; not only so, but it is placed
beyond the power of the will to a certain extent;
for though the will may restrain or stop the
wheels of life so far as to restrict consciousness
and consequently the will itself; yet then
the respiratory nerves will assume the command
and perform their functions again.

The muscles employed in respiration are the
Sterocleidomastoides, the Trapezius, the serratus
major and minor, and Diaphragm; all of which
except the Diaphragm are supplied by the external
respiratory nerve. The use of the Mastoides is
seen in common respiration; but more especially
in excited states of it, as in singing and laugh-
ing; for the Trapezius must fix the head and draw
it back before the Mastoides can act in respiration;
also the aid of the Trapezius is needed to en-
able the serratus to elevate the ribs in inspiration.

More nerves are provided for inspiration
than expiration, for it requires more muscular
effort; and it is more essential to life.

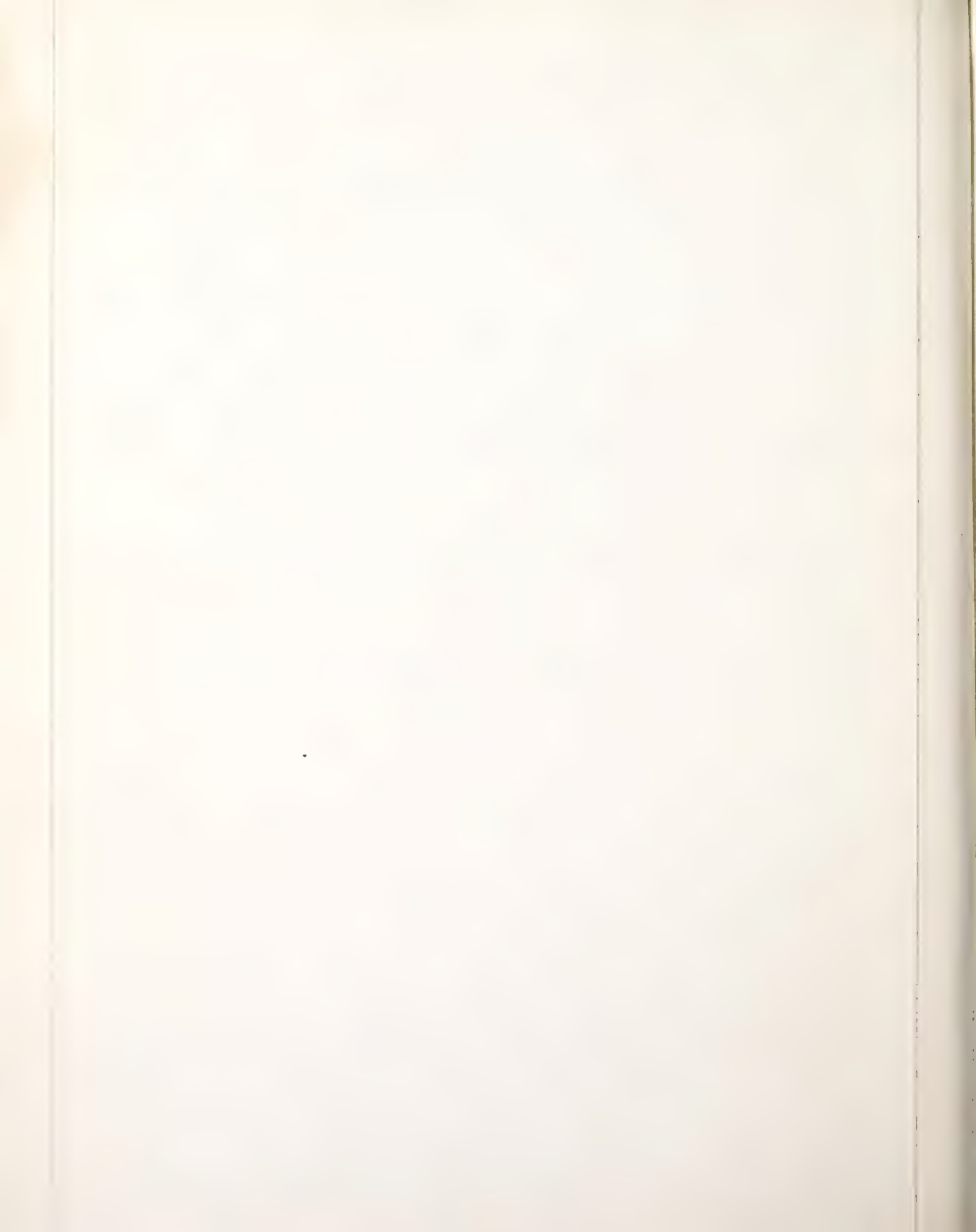
The Phrenic nerve causes the Diaphragm
to contract enlarging the cavity of the thorax,
but the pressure of the organs below returns it
to its normal state. The spinal accessory and external
respiratory nerves supply the muscles that
elevate the ribs, but their own resistance and the
weight of the scapulae, will bring them to their
former condition. But if the respiration becomes
obstructed so as to produce suffocation & find
difficulty is with inspiration; the same also occurs
when the last sands of life are running out,
exhausted nature struggles with convulsive
efforts to kindle up the vital spark which is
extinguished with expiration.

To the respiratory nerves must be referred
that thrilling characteristic of man called the
Expression. The countenance is the index of the
soul. This shows the hidden workings of the
inner man. Does joy gladden the heart and heart
enliven the mind, it is seen beam from
the eye and lighting up the expression; or
does sorrow threaten it, yes, also the same



and drink up the spirit; The fact is depicted
in long lines upon the visage of two unfortun-
ate One; or have the baser passions rule and
has anger driven reason from her Throne; it is
shadowed forth in the countenance in char-
acters not to be mistaken.

The eyes and Their appendages, the fore-
head and the muscles around the mouth
are the chief organs of Expression, These are
all supplied with a nerve from the same
nerve. Many experiments have been made on
the lower order of animals to show that the
Portio dura is not only the respiratory nerve
of the face but also the grand nerve of the ex-
pression. The respiratory nerve being cut in
a Terrier the side of the face was deprived of
all expression whether in the act of fighting
or crouching before an antagonist. It is shown
in this nerve also passes to the ear, but when the
connection, or man was cut, was the ear with the
Expression. This can better be seen by communicating
the nerve for instance in the Horse we find



This is the principle organ of Expression, and its effects are very striking.

Much may be learned in Diagnosis by closely observing the countenance in different diseases. Pain always produces a peculiar contraction of the features, varying according to its locality and intensity. We can never fail to observe that peculiarity of Expression attending Pulmonary Consumption. Exquisite pain, however, that an attentive observer, if experienced, may even perceive in the contractions of the face in what organ or what class of organs the pain is situated.

A thorough knowledge of the nervous system is necessary to make a correct Diagnosis in many diseases especially of the neuralgic kind; for neuralgic affections can only be relieved by ascertaining the original seat of the complaint and applying the remedies thereto.

Operations have been performed on the regulating nerve of the face for *Tic douloureux* without producing any effect of course, other than exhibiting



The skull of the operator; and tumors in the neck by breking the nerves have caused difficult respiration, which has been referred to the trachea. Again the pain of diseased nerves is often felt not at the seat of the disease, but in parts to which the nerves are distributed. A case is mentioned in which a local affection of the Dura mater was mistaken for an attack of Apoplexy, where the patient after having undergone the discipline of bleeding, purging, and starving, was suddenly cured by the bursting of an abscess in his ear.

In conclusion it may be observed that much benefit has already accrued from the application of the alveolus, made within a few years and every lover of humanity must rejoice in the advancement of the Philanthropic Profession of Medicine.

Wm L Bliss







IV

Dissertation
on
Phthisis.

By
Benjamin Franklin Bradford,
of Montville,
Candidate for the Degree of Doctor in Medicine.



Pneumonia Pulmonalis

Pulmonary Consumption is a disease that consists in a gradual wasting of the whole body, resulting from a peculiar pathological condition of the lungs, and has been the theme of much speculation with medical gentlemen in every age, since medicine became a science; and the day has not yet passed when the valetudinarian may not seek in the medical world for some means of prevention or some Remedial agents for the relief of its unhappy victims

Symptoms

The commencing symptoms are a slight fever, increased by the least exercise, with a short dry cough, frequent pulse, uneasiness about the diaphragm,



moderate heat, lassitude, wandering pains
and stitches about the whole system, esp-
ecially in the region of the thorax, resp-
iration hurried and slight exertions, a gen-
eral indisposition to exercise or motion
of every kind; preternatural dryness of the
skin especially of the palms of the hands,
and soles of the feet, a peculiar flush in
one or both cheeks about once in twenty
four hours; deficiency of appetite, with
many other dyspeptic symptoms, ap-
pear prominently to discredit that they have
any consumptive symptoms, or of believ-
ing that they have any serious disease
even when the strongest medical cases exist;
and strange as it may appear amidst
all the horrors of consumption the patients
hopes of recovery are seldom abandoned,
and even increases as the fatal termination
advances,



The secondary symptoms are ushered in by all of the preceding symptoms becoming more aggravated,

The cough at first, unattended by any expectation of consequence, is now attended with the raising of phlegm from the lungs, especially in the morning; the expectoration by degrees alters its appearance; its quantity is increased, it is less transparent, and at length yellow, or greenish, and finally assuming a purulent or corrupted appearance; Dyspnoea is one very prominent symptom.

Hectic Fever; and Colliquative sweats succeed one another and are of greater moment.

Edema of the lower extremities, and even puffiness of the hands and face are circumstances which seldom fail to appear in this disease.

Diarrhea and convulsions puts an end to life

Causes

Multiplicated and various are the causes assigned as giving rise to Phtisis by writers without leading to any good practical results.

The result of obstructions in the lungs, is in my opinion; the consumption, and these obstructions consist in; and is depending in almost all cases; on the existence of small tubercles in the substance of the lungs.

Tubercles in the lungs may, and in fact do remain for a great length of time without producing any serious inconvenience to the patient.

But there is, and always will exist, a strong predisposition in such an individual, to take on consumptive symptoms however weak he may appear, and the slight irritation of a light cold; which in others would not be noticed; will in him produce all the ravages of consumption,

It hence whatever has a tendency to increase the circulation in the lungs operates as an exciting cause of consumption

Treatment

The treatment of consumption (from its pathology) naturally divides itself into

1st The preventative agents in many

2nd The curative measures to be followed and

3rd The palliative remedies

1st The preventative agents, I have but one, and that is almost a specific, and that's universal temperance in all things

Remarks

)) If you know that Indigestion is the attendant hand-maiden (in most cases) of Consumption and is the first symptom that shows itself, and it is a pathological fact that indigestion destroys, or impairs every healthy function of the animal economy, when aliment is taken into the stomach in too great quantity or not in a proper state; or when its quality is ^{unwholesome}

The coats of the stomach act upon its contents to produce chyme, but in vain does she try to manufacture healthy chyme. She is bothered with are unwelcome guests, over whom she can have but little power, and when the physiological laws of nature demand of her, her usual quota of proper chyme



for the formation of chyle, the stomach
is necessitated of resigning up that which
she takes for that purpose, which is a
mass of ~~noxious~~ vapors, and acid
poisons, and the stomach herself wre-
athing with pain beneath her na-
rrow burthen, the lactals (from
necessity) need to stave their thirst
from this fountain of corruption and
disarray, and soon it is demanded of
them to render their usual quotas of
proper chyle, for the formation of the
blood and the supply of the sangui-
ferous system; such as they have, they
reign which is a mass of stuff more
fit for the drain; than for the blood
their functions being impaired by its
noxious quality, and when the blood
is called upon for her usual nutriment
for the whole body she gives up what
is furnished her from the preceding



conduits,

And considering the oft and repeated processes of nature in this her course and the above formidable obstacles to its healthful performance, the result must be apparent upon tuberculated lungs.

Hence the great object of health is to seek to supply the stomach with that which nature simply requires and avoid excesses of all kinds.

2nd The curative measures are to equalize the circulation of the blood by light and frequent bleeding, as the system will bear, blisters and counter irritants upon the surface and above all avoid that which is the exciting cause whatever it may be, and to depurate the fluids, which is done most effectively by



substituting wholesome food and
drinks for those that are unwholesome
and stimulating; by increasing the
tone of the stomach and bowels by
mild tonic remedies, and regul-
ating the other functions of the body
with their respective remedies,
exercise in the open air as the
strength will permit- cheerful
company and conversations- the
daily use of the tepid shower bath,
friction with the flesh brush; Dry
to be suited to the season, constant
use of flannels next to the surface
of the body; Issues, and scators may
be of use, by diverting the blood from
the Lungs

3rd The Palliative treatment is much
of the above, with the more use
of Anodynes combined with expectorants
and nervines. as the the present state
of the symptoms seem to indicate,
some of the astringents may be used and
above all avoid despondency in the
patients mind as much as possible,
by inspiring hope, and so soothe and
prepare for the worst.



V.

Dissertation
on
Laryngismus Stridulus.

By
George Elliott Budington,
of New Haven,
Candidate for the Degree of Doctor in Medicine.



If the importance of any individual disease, is ~~to~~ to be determined by its seat, nature, frequency of occurrence, the attendant distress, & the degree of fatality; then the disease of which I propose, briefly & somewhat superficially to treat, demands particular, & attentive consideration.

Laryngismus Stridulus, is a disease, which has been known to & received the attention of Medical practitioners & writers for a considerable period, & its dangerous tendency somewhat over-rated.

Its existence as a disease separate & distinct from ~~inflammation~~ Croup, has been a fruitful source of controversy, & the minds of the profession are still unsettled in regard to its pathology & treatment; in fact almost every

writer who has treated of this subject,
has different views in these respects.
Each one has given the complaint a
name to suit his own particular no-
tions - Hence we have - Inward fits,
"Spasm of the glottis," "Spasmodic Asthma,"
"Carpo pedal spasms," "Thymic Asthma,"
Child crowing of Goock; Dr John Clark
called it. A peculiar species of con-
vulsions in infants; &c. &c. I will
in this essay employ the term given
to it by Good, which best indicates
the seat of the disease & its nature

Laryngismus Stridulus. or Strid-
ulous constriction of the larynx, from
λαρυγξ & stridulus.

The essential symptoms of
this formidable malady, consists in
sudden attacks of breathlessness, caused
by the partial or complete closure of the
rima glottidis, producing of course
partial or total obstruction to the ad-

mission of air, into the wind-pipe, varying according to the degree of closure, with a sonorous inspiration,

When the closure of the glottis is not perfect, the child struggles for breath, the respiration is hurried, the countenance is livid, the eyes staring & each inspiration is attended with a "crowing" sound. When the function of respiration is suspended, the child makes vehement struggles to recover its breath, at intervals of from a few seconds to two minutes; the air is at length admitted through a very narrow chink, producing the peculiar sound.

To these symptoms, often succeed a fit of crying or coughing, which completely breaks the spell, & the paroxysm is terminated; but if the glottis be completely closed for the space of three minutes, the patient dies of asphyxia & he is said to have

'died in a fit'

Other symptoms have been enumerated by other authors, one of these is a peculiar contraction of the thumbs, fingers, wrists, ankles & toes. & Clasting during the paroxysms.

Some ~~writers~~ writers consider this symptom as essential to the disease, but Dr Ley thinks that such effects are purely accidental & depending upon the paralysis of the extensors. Dr Good thinks it ^{shows} depends upon a want of balance of power between the flexors & extensors.

It is obvious, from the symptoms & effects already mentioned, that this disease is some-what analogous in its nature to Asthma & Gout. But still with due care in making the examination, the diagnosis is not difficult. The distinctive marks or symptoms between it &

asthma, are that in asthma, the pain & constriction commences in the ~~Larynx~~ Chest, & is chiefly confined there; though it may extend to the lower part of the Larynx, while in Laryngismus stridulus the constriction & difficulty of breathing commences in the Larynx & ~~is~~ mostly exerts itself there; though it may extend down the trachea to the chest, in the former the respiration is wheezy, but not stridulous; while in the latter the voice is stridulous, the ~~respiration~~ ^{inspiration} is rarely wheezy or so to an equal degree; showing, evidently, a difference in the seat of the ^{two} ~~same~~ diseases.

But the diagnosis between this disease & Croup is much more difficult, as the general symptoms make a far nearer approach to it.

In Croup the presence of inflammation & the "peculiar concrete membrane-like substance" (of Ford) & the want of them

in D.S. is pathognomonic; as also the suddenness of the accession of a paroxysm of this disease; there are instances, ~~it~~^{and} it is true, of genuine croup commencing abruptly, but they are rare, there are usually precursory symptoms, such as a slight cough or hoarseness, as if the patient were laboring under a catarrh. In croup also, when inflammation has ~~once~~ commenced it remains a permanent cause of ^{the anxiety &} excitement, & struggle for breath continues until the inflammation is subdued. in the disease under consideration, the spasm subsides as suddenly as it commenced, though it may return in an hour or even a few minutes, but in the interval; the patient is perfectly at rest. Croup is also almost exclusively a disease of childhood, while D.S. often affects adults.

From the history, I will now turn to the pathology of the complaint, & here

^{we} find "the doctor disagree."

Dr Hugh Ley, thinks that the disease is owing to the enlargement of the absorbent glands of the lungs-- we will let him speak for him-self.

The cause of the crowing inspirations -- is either an enlargement of those absorbent glands, which are constantly found at root of the lungs, both before & behind the trachea & the two bronchia & frequently blended with others, which lie upon the arch of the aorta & not unfrequently with the cartilages, or a similar enlargement of the deep-seated chain of conical glands, known under the technical appellation of 'glandulae concatenatae'. The former may be enlarged by exposure to cold, from frequent catarrhs, disease of the lungs, pericardium or heart, from a sthumous taint, & probably from an extinction of diseased action from the continuous conical glands, which according to Haller & others; constitute a continuous chain with them,

~~the same~~ ~~the same~~ ~~the same~~ ~~the same~~ ~~the same~~
~~the same~~ ~~the same~~ ~~the same~~ ~~the same~~ ~~the same~~
In the adult, these glands when morbidly enlarged, may seriously embarrass the respiratory function & even instantaneously destroy life, ^{by} suffocation; in children when similarly enlarged, they may produce the crowing inspiration, preceded or attended by temporary & sometimes fatal asphyxia.

For the first hint of this pathology Dr. Key acknowledged himself indebted to his former colleague & friend Dr. Miniman, since which time he has had numerous opportunities for tracing the connection in question & verifying by dissection, the relations which the symptoms bore to the diseased parts. He relates several cases to prove his views & theory & then adds, "I can with perfect confidence assert, that in considerably more than twenty ~~cases~~ successive cases, with one exception only I could trace the enlarged glands, from the commencement; or in the progress of the complaint, they have been distinguished during

life, or discovered after death, & I may now therefore, I trust, without arrogance assume, that enough has been said to establish the proposition, that at least, in a ^{large} numerical majority of instances, of the Crowing of infants are produced by the enlargement of glands situated in the course & influencing the functions of the recurrent nerves & sometimes probably the paraganglion."

In this Dr Sey is probably correct, but the same disease may be owing to ~~other~~ causes, it may be effected by a morbid thickening of the mucous membrane lining the Larynx & Pharynx. -- North considers it an affection of the brain -- But we might go on almost "ad infinitum" in enumerating different theories, ~~but~~ but my time will not permit, & I will only say that the best evidence generally coincides with Dr Sey. —

But the most important part of my subject remains to be investigated, viz the Treatment of the complaint; & to this all other considerations are subservient & they

become truly & doubly valuable, when they lead to practical conclusions, which will increase our power in controlling the disease.

We have seen that this complaint may be induced by different causes, & we must regulate our treatment, & the administration of our remedies, according to circumstances. If we should discover tumid glands; we should trace, if possible the cause of such enlargement, & by adapting our remedial agents to that cause strike at the fountain-head.

I will now quote briefly from
 Dr. Ery - "It has been seen, that the connection between this disease & as the effect; and the enlargement of the cervical or thoracic absorbent glands, as the cause; is one of great frequency & intimacy & that the evidence of this essential connection, derives material confirmation from the fact: that the exciting causes of this peculiar Malady are incisely those, which, according to the best authorities on such

subjects, an constantly producing enlargement of these very glands - But we must not conclude that such a condition does not exist, because we are unable to discover the tumid glands, for they may exist in the neck even, & yet escape our notice; while those situated in the Thorax, will escape our detection by an external examination, & Dr Sy says that "as similar diseased conditions, commonly produce the same or similar results, we infer from the occurrence of the latter the existence of the former."

But this particular pathological condition of these glands, only predisposes to attacks of this disease & they require exciting causes to bring them on; which may be inflamed & sculp - dentition - affections of the Mind, as fear or Anger. &c

Age & hereditary or acquired constitutional peculiarity; the former, of course we cannot control, but if there is any predisposition to this malady, double caution, is requisite, to avoid all things, which will be apt to bring it on.

Climate situation & season, are also among the causes

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are not the least influential; this disease is quite frequent in low marshy situations, but it is infinitely more frequent in crowded cities & large towns.

The regulation of the diet, is also of great consequence. the child should always be ~~said~~ spared from the breast; especially when family predisposition exists, & if from disease; or otherwise, the mother is unable to perform the duties of nurse, a wet-nurse should be provided. Dentition is by far the most frequent local cause & hence the propriety of freely lancing the gums of those teeth, which in regular order are next expected to appear. upon this all writers agree.

Straining of the body or violent exercise. fretting, cough, indigestible & irritable articles of food with-in the stomach or bowels &c may induce a parotysm. We should endeavor therefore to prevent or counteract the operation of these causes —

Besides attacking the predisposing & exciting causes, we should give our attention to making up the parotysm, as speedily as

possible, which may threaten death by suffocation.

The child should be put into the warm-bath. (of about 98° Farh.) & continue in it during the paroxysm; or for 10 or 15 minutes at least & while in the bath sprinkle cold water on the face & chest, ~~with~~ which is followed by a short inspiration & a lengthened expiration; which in turn is succeeded by a fit of coughing; & the paroxysm is broken. It is also well to apply ammonia to the nostrils & also, by irritating the pharynx with a feather or the finger to produce emesis. Millar says that, purging will abort the paroxysm; but we have not time to wait for the operation of a cathartic; an enema will generally suffice; to which may be added assafoetida or turpentine (if at hand.)

The nurse to save the child from impending suffocation; pats it strongly on the back, or shakes it violently & although it answers the indication; she does not know that it acts upon a well

Known principle; it causes the child to cry; which is an explosive expiration, & of course opens the glottis.

Frictions on the Chest & abdomen are also useful; but these should be employed while the child is in the warm-bath.

For the ultimate cure of this disease; emetics must be employed, during the intervals, between the paroxysms. Dr Marshall Hall advises, that the gums should be pricked & frequently lanced; with-out reference to the teeth; he prescribed it to be used daily; to correct the state of the blood vessels & nerves. In the case of glandular enlargement; if it should be active & there be a tendency to suppuration, it should be encouraged & the abscess opened as soon as possible; if, on the other hand it should be indolent; its absorption should be attempted; & with this object in view iodine, or its salts must be exhibited. The two great remedies relied upon by Dr Meadman are Iota & Burnt Sponge. The latter owes its ef-

ficacy to the iodine which it contains & soda corrects acidity; which is so fruitful a source of bowel complaints of children.

But it will often be the case, that after the most judicious treatment the complaint will remain unimproved; in fact it may be growing worse & here change of air & place is urgently indicated & for this particular instance; will act almost as a specific.

Dr. Syg mentions an instance, when after the use of the usual remedies, there was no improvement, he recommended a removal from the city to the country & the beneficial influence of it was immediately ~~felt~~ apparent; the parents supposing the child cured; returned to the city; & immediately there was a return of the symptoms!

It will often require, the most judicious treatment, aided by pure country air to effect a cure of this most obstinate complaint.

But I have trespassed too long

already, upon your time & patience,
& in concluding the treatment of this dis-
ease, I will repeat the advice of
Prof. Gros of this Institution. often re-
iterated in his lectures. "Prescribe
for the symptoms as they occur".

Geo. Elliott. Budington.



VI.

Dissertation
on
Apoplexia tremulenta.

By
Nathan Bulkley,
of Fairfield,
Candidate for the Degree of Doctor in Medicine.



Apoplexia Simulenta.

This term is used to denote a state of high excitability, or an apoplectic condition, depending upon derangement. It is to the nervous system, & its functions, & also as demands the mind & attention to which attention will be chiefly directed. I shall here speak of this state as a disease in itself, although I believe it is rather that the phenomena of medicine are as to act as a disease, & in the fact, that during the violent therapeutic process to which it has led, & even then has to subvert the system to the danger.

The practice of using the term is to be avoided, & to be used in extent as to persons who are, is not to be used, & it can be said, & it is not to be said. The only way to the end, & the only way, mankind has been addicted to the use, & it is not to be said, & it is not to be said, & it is not to be said, & it is not to be said.

present, & were there no other cause, & as
you have shown in the subject, the the
discovery of the occurrence of intoxication,
the cause would be important, but it does
not influence in producing disease, & in
modifying it when present, will I examine
particularly the remedies which are used & the
Exhaustion.

Intoxication even in its mild &
less apparent form is a fruitful source of
disease. To this point every practicing phy-
sician can testify. For how often has he
been called upon to prescribe for a disease,
the direct & only cause of which, is to a tra-
ce to the immediate use of violent spirits.
It may be as the result of the first only of
intoxication, or as the consequence of a long
continued habit. But how often has he
been compelled to change his remedies to in-
suit the peculiarities of the case. For in a per-
son of temperate habits, who perhaps is never in-
toxicated under the same disease, the dis-

of emotions will be appropriate; while in the continued state of action & activity, and the close will be necessary to maintain such is the action of the long & continued use of this powerful stimulus.

Causes of Aberrations.

The direct cause of aberrations is the influence of the external & internal excitations usually admitted in the mind & its various organs. But there are many circumstances which may be considered as remote causes in the production & continuance of the disease. There are some persons, who we could almost say, were born to be drunkards; they have a liver, an insatiable appetite for spirits, which becomes insatiable. Their constitution is such as to render them peculiarly susceptible to its influences which are to them of the most lively & agreeable nature, & that they may be so easily their inspirations they are inclined to continue the practice & drinking, until it has

become a habit & so convinced that the value
of it gives the only end of living.

Early in life is undoubtedly a pregnant
& judicious source of circumstances; for we can
easily believe that those persons who from
their childhood have been accustomed to have
the glass frequently & regularly open their
will be more likely to continue the practice
in after years, than those who have more
than 20 years will be, to examine it
of themselves. It is impossible in any case
to give the cause of this slavish practice,
even the slave himself is called
upon, is not always able to recall the par-
ticular circumstances, & look back upon their
mode how what he is. He will point to in-
sufficiency of business - loss of property - diffi-
culty in family matters; or to perplexing
care & troubles of every kind, as the cause, &
undoubtedly under the depressing influence
& accidents of this nature, stimulents are often
directed to as a source of relief, but it is

Habit which has so covered an influence
on the constitution of man, which leads him
to form an opinion of nature, which, before
he is conscious of danger, he feels himself
entangled involuntarily in its fetters.

Propriety.

The first symptoms of insanity
are, mental exultation, unusual gaiety,
a perfect silence, a disposition to quarrel,
a uncommon good humor, joyousness, dis-
position of care, a disposition to disclose the
secrets of the people's secrets, often profane
swearing, the performance of immodest acts,
drinking, talking very loud, jumping, dan-
cing, wearing thin and light clothes, breaking all
things, can lay their hands on the perform-
ance of all such like kinds of extravagance.
The face will now be flushed, increased ac-
tivation of the features, especially the eyes
which will be uncommonly bright, a degree
of anger, the lips become white, there
is now an increase in the pulsations & heat

metabolic transformation, the secretion of urine
is greater than natural, with a demand
to absorb it, thus, increasing the pulse
and pressure & at times.

With the state of the system & various
excitement has continued for a long time,
varying according to the amount drank,
the circumstances under which the individual
is placed, & the degree of temperature to which
he is exposed, the warmth will increase & lengthen
the stage of excitement & the whole system
will be affected. As the system is affected the degree
of exhaustion of the more advanced stage.

With a longer or shorter period of time
each mental type, the result of the excitement
is the same. Excitement & decline, the
symptoms of the second stage or of decline in-
crease. The first stage is now more com-
plete, more intense, more to be feared, the
risk is more dangerous by its nature. The
system is now in a state of exhaustion, the
first stage is now in a state of exhaustion.

parting the body, we are left with the soul.
The brain and nervous system, the body
connected in a moment it is gradually dissolved
by heat & decomposed; the process is a continuous
action which from the first moment we are born
until we die by heat, the heat & cold it is
able to remove himself, Consciousness is now
almost or entirely gone, in some the mind
can be seen when it is lost. As heat & cold
is a dark stage of the mind it is very difficult
to observe this, it is not entirely correct to
say it is not be conscious of what is passing around
it & immediately after death it is no longer
The soul in this stage will be pale & it may
be observed, The eyes are open & appear
can't & depressed; sometimes they have a glassy
appearance; the pupils dilated & the
irregularly & imperfectly, at all in relation
to light, the temperature of the body is warm
while that of the extremities & the rest of the
body are below the natural standard, the
pulse which is the only stage of the body

slow & insidiously is more insidious & deadly, if the
intoxication be very deep and may be entirely
fatal. At the onset, the respiration is often
irregular & laborious. Sometimes stupor -
Such an form of the more common symptoms
attending deep intoxication, if sometimes
relapses, when large quantities of alcohol
are swallowed in a short time that indicates
if all these symptoms appearing in equal
order, that there will be full & complete sus-
pension of all the functions of the brain almost
immediately.

Diagnosis. The diagnosis in cases of deep in-
toxication is not always easy, there are many
diseases with which it is liable to be confounded
& some of them which it will be extremely diffi-
cult to distinguish. The symptoms of a pro-
fuse, or ^{or excessive} compression of the brain, & of apoplexy,
all a variety of them do much resemble a pro-
fuse state of intoxication, that the greatest
care even with the experienced will often be
necessary to distinguish between them.

Extreme debility with other symptoms of the
system similar to those to be expected in
cases of the latter kind. The value of the pulse
is one of the best indicators which we have to rely
on in the diagnosis in cases where any doubt
exists. Yet this is not always to be relied
upon with confidence, for a person with a strong
heart but a small quantity of spirits may be
affected with debility, or even a slight &
deeper form of disease & moderate compression
of the heart, & yet have the characteristics of
the heart which we would have in deep in-
toxication. So on symptoms then I have to
rely for my opinion in such cases. But
the facts of the individual, particularly his
the circumstances under which he was placed
at the time, & in which he began to suffer. The
fact of his being plethoric in the blood, & having
all the conditions of an anæmic system.
In cases of deep intoxication when the heart is
strong is present as it sometimes is the diagnosis
is rendered still more problematic, for in such

a case in I should have no guide to distinguish
the true from the false. I should be able to note
Prognosis -

The prognosis in this disease is
always favorable, all the ill-effects usu-
ally passing off in from twenty four to thirty
six hours. Occasionally however a more or less
long period than this is required before all
the functions are again restored to their normal
& healthy state. But should the pulse be
very full, indistinct, or even wanting enti-
rely at the heart, as it sometimes is, should the
expiration be much oppressed, laborious,
or stertorous - should the countenance become
extremely pale, or livid - the lower extremities
the extremities cold - or should totality
of action cease, the prognosis will be decidedly
unfavorable -

Appearance after death -

The external appear-
ance of the body of the subject has that of
a fit of drunk intoxication, very nearly normal -

the turn of death is an asphyxia. The face
will be livid & cold, and the lips & fingers - the
lips & those parts which in health present a
rose tint will be of a bluish color. The eyes
will be prominent, & the pupils dilated.

The Stomach.

The first effects of alcohol on the
Stomach of a person unaccustomed to its use is
an excitation of all its functions. The gastric
secretion, muscular contraction & peristalsis, are
all increased. The system works & secreting
as to all appearances the health is benefited for
the time being, provided the use of wine
be not excessive. This excitation however long
continued, will be followed by depression,
which will result in the weakening of the
coats of the Stomach. With regards to the effects
of alcohol on the Stomach Dr Beaumont remarks
"After ardent spirits had been freely used, as
well on some days, the observer soon detected
a general relaxation upon the various functions,
which increased during a short & continued

unco-junctant matter exuded from the diseased Organ. These morbid changes & conditions were seldom indicated by any ordinary symptoms, or particular sensations described or complained of, unless when in considerable excess. They could not in fact have been anticipated by any external symptoms & the existence was only discovered by dissection & the subsequent examination of the diseased Organ."

From the continued use of alcohol the mucus
secreted by the stomach & small intestine becomes condensed &
thickened. Its color will be changed, ap-
pearing almost black, & its consistency such that it is
difficult to digest. The vessels both ar-
terial & venous will be found engorged with
dark colored blood. Small ulcers are often
found on the lining of the stomach & in some of the worst
cases it is said the whole of the mucus mem-
brane has been removed by a gradual process
of ulceration & softening.

The Brain.

When the brain has been examined in cases of death from dropsy, in nearly every instance the membranes have been found much enlarged with a considerable effusion of serum in the sulci & under the arachnoid while the substance of the brain has been found of an unusual firmness & generally of a lighter color than in health. The ventricles contain a much larger quantity of serum than is natural & the vessels are full & injected with a dark colored blood.

The Lungs.

The disease of pleuritis serosa is not only a powerful predisposing but exciting cause of dropsy in the lungs. Particularly Pott's. But some writers state that the lungs of tubercular persons are less liable to tubercular disease than are those of temperate subjects. But this does not agree with the general testimony of the majority of medical observers. For almost all cases in the opinion of the above writers often die of disease

to the lungs there is almost no other organ -
alcohol as it is conveyed by the circulation.
though the lungs & kidneys off by the exhalant & app-
els must necessarily come in contact with the
delicate mucous membrane of the bronchi &
air cells, & by its irritating properties induce
cough. This irritation constantly kept up will
predispose to inflammatory attacks, &
the copious secretion & expectoration to which
asthmatic persons are subject indicates the
irritated condition of these organs. They
are found upon examination to be perfectly
dilatated with air & blood mixed. The same
condition of the lungs of such persons is in
an irritated condition. The same organ is
said to be hard & half solid to the feel, & it is
in fact so found so that the finger could be
easily forced through it.

The Heart - This viscus is generally found in a
diseased condition, the muscles being soft &
flabby. It is commonly enlarged with in sub-
stance but is dilated & covered with fat.

Dark bluish blood is found in both ventricles in the Aorta & pulmonary artery. The valves & large arteries are often ossified & in some cases the organ is hypertrophied.

The spleen - There is no organ in the body so liable to be affected as the spleen as the liver. Even in moderate diseases it is usually enlarged & known as spleen enlargement. But in old diseases the enlargement is often very great. Sometimes it is diminished in life, & enlarged in life being filled with very fine blood vessels, & in a hardened & ossified state. The lymphatics are often left being endogenous the fatty degeneration to a greater or less extent. Occasionally tubercles are found in different parts of its surface. From the nature of the work which this viscus takes in the process of digestion any disturbance in its functions must necessarily occasion more or less enlargement in the general health. Consequently we find the abdominal subject to tubercles & the spleen, & as is perhaps more generally the case an enlarged spleen constitutes a disease.

Treatment.

The first object to be accomplished in the treatment of a case of large varicose veins is the separation of the contents of the stomach, that what free liquor there is still remaining may be thrown off - This is not always easy to be effected, & it will take a time before the stomach has been brought to a point & made able to be readily acted upon by emetics. The stomach pump, therefore, should be used before other emetics are given if it can be obtained - We may occasionally happen that the contents of the stomach are not sufficiently fluid for the action of the pump, as when a great deal has been taken just before the liquor is drawn. In such cases, warm water may be given to dilute its contents - This may also be done when it is not necessary to dilute the contents, for the same distention will often be removed, when the stomach is distended, before the expurgation will often remove the contents & free emetics -

Tiedling the wound with a further small dressing
prevents bleeding when sutures have been placed
but it is not usually a $\frac{1}{4}$ of the temperature of the
head is lost, a dressing with cold water may be
serviceable. When the temperature is much lower
and the extremities are cold as is generally the
case in deep intoxication, external heat in the
lower way must be applied. As long as lower
extremities are warm should be retained, but in
a severe condition that may require surgery.
All ligaments should be removed from the
leg, especially the ankle joint, the body placed
in a proper position with the head elevated.
Remission can rarely be achieved as a remedy
in cases of deep intoxication, especially when it
is attended with abdominal distension, the
liver cases, the pulse is generally lost & death
the abstraction of ^{blood} from the surface. But when
the pulse is full & strong, the face flushed,
the temperature of the body much elevated, &
when there is danger of rigidity of the spine from
the time, counteraction of the fit, blood may be taken,

The Acetate of ammonia is advised
as a remedy in intoxication & is said to help
up sleep & to assist in restoring
the patient. It is given in water or lemon
juice & in drops. Should this prove ineffic-
acious the quantity may again be given
in ten minutes after. A full dose is
a stated measure of water & vomiting, this
process will be a salutary operation of the
remedy. It has been suggested that the carbonate
of ammonia might be used with advantage.
Experiments have been made with this medicine
& it is said, will complete cures.
After the animal had been made insensible
a solution of the carbonate was introduced
down the esophagus & the alcohol caused immo-
bidity. The digestive acids are thought to
help the body & counteracting alcohol.
Especially vinegar. The infusion of different
herbs & tea is sometimes given in cold cases.
The treatment of the patient is, much regula-
ted by the symptoms. — C Nathan B. Kelly.

VII.

Disertation
on
Traumatic Tetanus.

By
Marcus De Forest,
of Woodbury,
Candidate for a License.



Hæmaturic Tetanus.

Hæmaturic Tetanus, is a disease of the nervous system. And as its name implies, arises from wounds in some of the tissues, and those wounds usually which are slight, causing but little inconvenience at the time, are as liable to produce the disease as those of a grave nature.

T. H. is characterized by an extremely painful, tonic contraction of the voluntary muscles, attacking successively all or nearly all of the muscles of the body. Opisthotonus is a term which has been applied to that variety of the disease, in which the muscles of the posterior part of the body are so affected, as to cause the trunk to be bent backward, in the form of an arch, the body being supported upon the nates and sacrum. I believe most writers on this subject, concur in the statement that this variety of the disease is the one most commonly met with.

When the muscles of the anterior part of the body gain the ascendancy and draw the body forward it is termed Emprosthotonus. Plurisotonus is a variety rarely met with. It consists of a lateral

incurvation of the neck and body. This mus is a name given when only the muscles of the lower jaw, are implicated, called socket-jaw.

A slight stiffness of the muscles of the neck & those of deglutition, and a dryness of the throat, always mark the commencement of the disease which commonly commences between the seventh and fourteenth days after the reception of the injury.

The patient being unaware of the true nature of the disease, attributes his feelings to a slight cold, and regards it as of little consequence. These symptoms though common to many diseases, excite immediate alarm in the minds of Surgeons, when the individual who experiences them, receives treatment for local injuries. Subsequently there is a violent, spasmodic, lancinating pain, which shoots with the rapidity of lightning through the chest, from the Sternum to the spine, recurring at shorter & shorter intervals, & is augmented at last to an intolerable degree of intensity.

A feeling of pain and stiffness occurs in the temporal & mastic muscles, and the jaws grad-

nally approach but without entirely closing, the tonic spasm holding them firmly in that position. The muscles of the neck become implicated, and owing to a balance being sometimes maintained between the flexors and extensors, its position is kept in a straight line with the body.

The patient is unable to swallow liquids, in consequence of the spasm which has by this time beset the muscles of the pharynx, or if he does accomplish deglutition, the effort is often so convulsive and agonizing, that he entertains the greatest dread of repeating it. Through the intervening space between the teeth exudes a viscid and ill conditioned saliva. The trunk and extremities become variously distorted, & the face is miserably disfigured by the perverted action of its muscles, which draw up the nose, wrinkle the integuments of the forehead and drag the angle of the mouth towards the cheek bone.

The spasms about the muscles of the thorax gradually increase to such a degree that respiration is performed with the utmost difficulty and anguish.

This occurrence eventually performs a very important office in the extinction of the patients sufferings by death. Although the contractions of the muscles rarely cease so completely as to form an intermission, there are occasional remissions which, it regards the mouth, far outbalance the horrors of the case. For it often happens during the brief separation of the parts that the tongue is convulsively protruded & not retracted in time to escape the reclosure of the luth, causing a flow of blood from the mouth, which being mixed with the saliva and added to the disfiguration of the countenance, gives the patient a most frightful and hideous aspect.

The sphincter is variously affected. Thus the urine is sometimes discharged with great and sudden impetus during the vehement contractions of the abdominal parietes, at others it is retained.

The anus is in general most obstinately closed, though cases have occurred in which the contents of the rectum have been expelled involuntarily.

The patient is scarcely for a moment free from the most agonizing spasm. But notwithstanding his extreme suffering the intellect remains unclouded to the last, and the pulse rarely over mounts to the height of fever. Perspiration is profuse over the whole body owing to the violence of the paroxysms. This continues during the whole course of the disease, and has a peculiar pungent odor. The circulation is at times affected, but it is only secondary, from the violence of the muscular contractions. Attending this disease there is always a torpid state of the bowels, resisting the most powerful purgatives that can be employed. Partly owing no doubt to the excessive quantities of narcotic medicines, which are usually prescribed from the beginning, and partly to a constricted state of the intestinal canal.

At the end of about 24 hours, the disease has so far advanced that the patient is totally unable to swallow. As it advances the form of the muscles become distinctly visible under

The skin, rigidly increases, and emaciation is often apparent. The face is more and more distorted a cold clammy perspiration below the skin, and the spasm are aggravated by the slightest exertion whether for change of position, or to take food or medicine. The convulsions are fewer and of shorter duration, the dyspnoea increases, and death takes place, almost hailed with joy even by the nearest friends of the deceased. Mark Scalapinites is it in the estimation of the bystanders than his previous sufferings.

The time in which the disease usually terminates by death, is in from two to four days from the attack. Hippocrates says, the third, fifth, seventh or fourteenth may be the fatal day. And we have on record the case of a man who having received a slight scratch on the hand, died of Tetanus in fifteen minutes.

Such instances however, should be considered as rare exceptions to the general rule.

Cause.

The exciting cause of this disease, is the local irritation of a nerve, produced by cutting, bruising, tearing, lacerating, or by any means by which a solution of continuity of any of the tissues is accomplished. Wounds in the extremities, and those of the fingers & toes often give rise to this disease, than those in any other locality. Surgical operations, as those of amputation &c have been known to produce the disease. If in the course of a week or so from the reception of the injury, be added the influence of a cold, moist, foul atmosphere, the disease is infinitely more liable to occur. When the predisposition to the disease is ~~favorable~~ strong and collateral circumstances favorable, the locality of the wound is almost a matter of indifference. No particular state of the wound, at the time of the occurrence of the symptoms, is necessary to the production of the disease. And no particular change takes place in the character of the wound,

indicating its approach.

Diagnosis.

The features of this disease are so striking, peculiar, that they cannot be very readily confounded with those of any other.

It is necessary however to be aware, that hysteria which imitates so many formidable diseases, does not allow the patient to escape her mimicry. Sometimes the representation is so faithful as to lead us to believe, that many reputed examples of successful treatment of tetanus have been merely conquests over hysterical spasms. A little attention however to a few of the peculiarities of the two diseases, will guide us in our diagnosis.

1st The period of accession of T. T. is more usually the 2 week from the exciting cause, or between the 7th and 14th days. T. H. comes on from the 2^d to the 5th days, rarely later than the 6th or 7th. 2^d The particular locality at which the muscles are first affected, is an important point of consideration. In

J.T. the muscles of deglutition and those about the neck are always affected first. In *J.H.* it is different. The affection first showing itself by a spasmodic action of the muscles in the immediate neighborhood of the wound. 3^d In *J.T.* the jaws are never so firmly set, as to be entirely closed usually remaining ^{loosely} open a 1/4 or 1/2 an inch. In *J.H.* they are entirely and almost inseparably closed.

In consequence of the difficult deglutition produced by the spasm in the pharynx, and the occasional dread of fluids, taken in consideration with the aggravation of the symptoms by trivial excitement, *J.T.* has been said to resemble *Hydrophobia*. In *J.T.* however the mind is always clear to the last. In *H.* almost from the commencement there is a deviation from the usual habits of thought and action, indicating mental aberration, which often passes on to delirium or raging mania.

By careful observation then, and by the history of the case, the judicious Surgeon will not be likely to be led into error.

Morbid Anatomy.

In regard to the morbid appearances, as laid down in most of the treatises on this disease, in my opinion many of them are accidental, they are by no means constant, & vary in degree in different cases. I shall therefore with these few remarks pass on to the treatment.

I regret that I can say nothing satisfactory in regard to this, I need not say, the most important part of our subject.

That I can do little more than to recount a series of defeats incurred by almost every therapeutical agent that has been employed against the terrible malady under consideration.

The prognosis is very unfavorable the acute cases terminating almost unavoidably, fatally.

Beneficial effects of medicines can only be had temporarily, to sooth the anguish of the sufferer, & make his passage to the tomb more easy than it otherwise would be.

The emulsion carried to the extent to produce

a decided impulsion on the sanguine system, has been recommended in the beginning of the attack, being guided as to the propriety of the treatment by the constitution of the individual patient. It cannot be maintained that this treatment exerts any beneficial influence, otherwise than stimulatory, or auxiliary to other measures.

Narcotics are among our first remedies. And of these Opium has been more extensively resorted to than any other, administered in powerful doses to produce narcosis. The warm bath and cold affusions have both been extolled by some, while by others condemned as prejudicial.

Mercury has been tried both externally, and internally and in combination with other cathartics. It has been thought by some, that if mercurial ptyalism could be produced, the disease might be ~~produced~~. But the patient in the acute form, (and this is the form with which I am dealing) goes out of the hands of the Surgeon, without giving him an opportunity to produce the desired effect. Hydrocyanic Acid.

digitalis, and Tobacco, have been employed to produce their prostrating effects upon the muscular system, in hopes thereby to relieve the spasm.

The actual cautery, & active irritants have been applied along the course of the spine.

Together with active caustics locally applied, such as Corros. Sub. Nit. Arg. Caustic Potass &c.

All the above remedies have been employed, together with amputation of the wounded limb, with the same uniform result, little or no benefit to the patient.

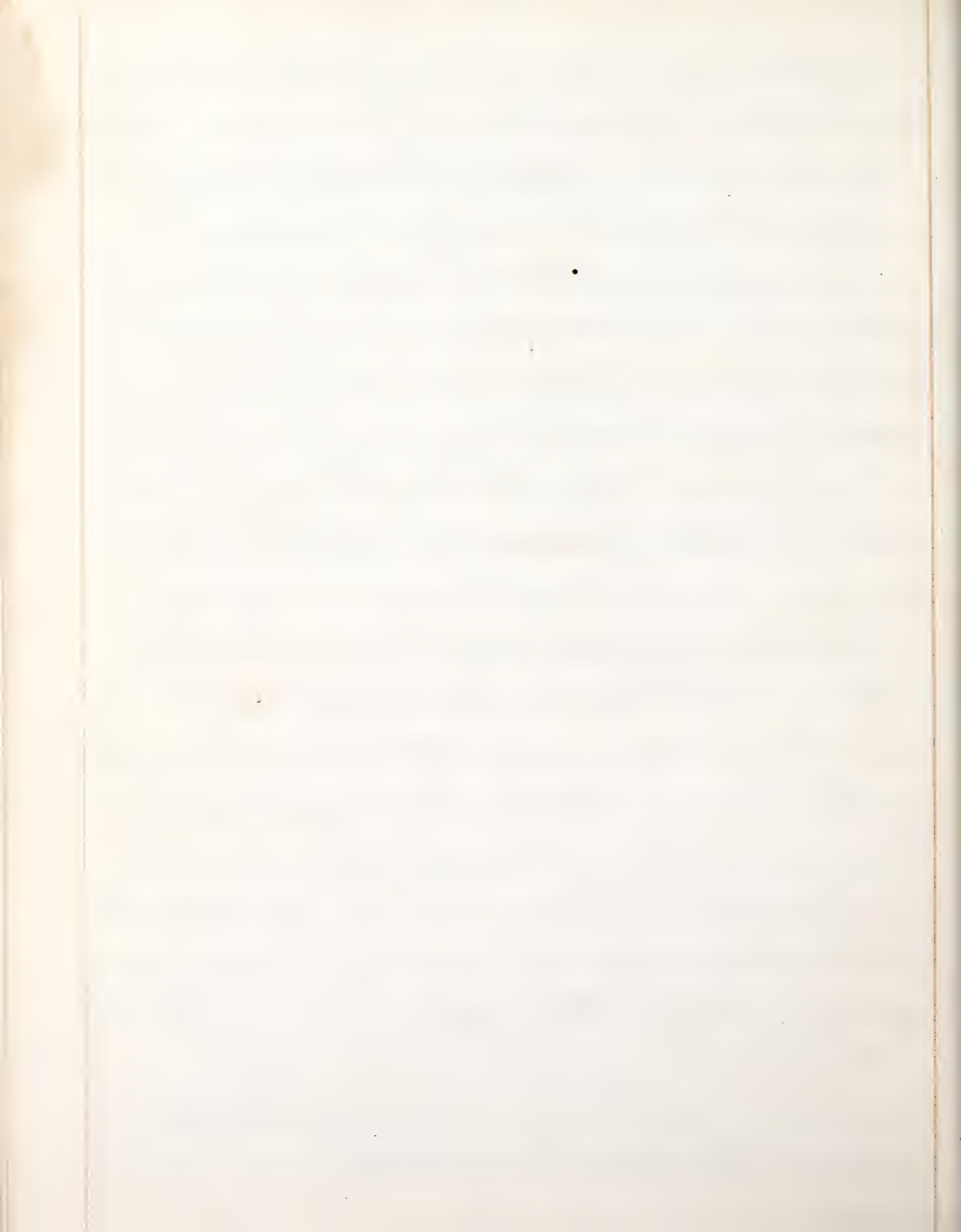
Purgatives are a class of medicines upon which we should place some reliance, both on account of the obstinate costiveness which attends the disease, and because of the ^{ir}strong revulsive influence on diseases of the Cerebro Spinal centre. The quantities required however, in some ^{cases} to produce an evacuation of the bowels, are almost incredible.

On account of the utter failure of all the remedies that have been hitherto employed in the cure of this disease, it has been proposed

to introduce into the system, a substance which has the property of producing on the nervous system a condition directly opposite to that which is developed in Tetanus, viz. paralysis. Not that the advocates of this plan, have become followers of Hahneman, but that it is a simple and undeniable fact that disorders are occasionally removed by remedies which have the power of producing similar affections. For effecting this object, in the case before us, Strychnine in $\frac{1}{4}$ of a grain doses every 30 minutes has been recommended.

The success of this plan, remains to be seen. A hundred other remedies and plans of treatment have been devised, with an account of which, I have not thought it expedient to weary your patience, nor do I deem them of any practical ^{importance} whatever. Such a multitude of alleged remedies as Tetanus has, is only a proof of their utter inefficiency.

W. D. Forest Jr.
New Haven Jan. 19th 1848



VIII.

Dissertation
on
Tubercle.

By
Philander Phelps Humphrey,
of Torrington,
Candidate for the Degree of Doctor in Medicine.

Tubercle.

The term Tubercle is derived from the Latin tuberculum, signifying simply a small tumour. It is now employed to designate a peculiar morbid deposit, connected with a particular diathesis termed the scrofulous. The knowledge of the existence of this product is as ancient as the time of Hippocrates, but for its pathology was involved in profound obscurity, it was left in a state of "what" a fog for some which I believe it had passed, since its unequal clearing, and correct its effects. But though the true nature, causation, progress, and termination of tubercles has been as its subject of the investigation of the most eminent pathologists of the age, these resources have elucidated more, that was formerly obscure in its pathology; but from the various opinions which I have digested without it is evident, that our knowledge touching it is imperfect.

Upon these points, difficult of demonstration,
and considered by the profession as yet un-
settled, numerous hypotheses have been advanced,
and many attempts have been made to settle
the matter by dissection, and more re-
cently autopsic investigations, that we must look
for a thorough knowledge of this subject.

The universal prevalence, and remarkable fatality,
of this disease, and its position in the list of
causes of death, has long attracted the attention of
physicians, and has led to many inquiries into its
nature and progress. It is estimated, that it causes at
least one-fifth of the mortality in the
human race. In discussing this subject, I
can merely merely from a comparison of various au-
thorities, state what conclusions may be drawn, and
must content myself with the appearance of the
disease, and its progress to extinction. The great
variety of opinions among distinguished pathol-
ogists on many points in the theory of tubercle,
and its nature, its progress, its fatality, its
varieties, mode of softening, and vascularity. The
causes of many of these discrepancies are obvious, Dr

Carmell observes that the form, consistence, and composition of tubercles vary with the situation of the part in which they are found, and the period at which they are removed, their appearance is therefore the result of changing circumstances, and hence cannot be uniform.

There are two kinds of tubercles - the spike, or Miliary, &c. etc, and the granular, semilunar, &c. The deposition of tuberculous matter in the lungs is in another manner than tubercles in the skin. I have considered this by a more rapid state of the tuberculous matter, from which the present form of the lungs is derived, and this view is generally adopted, given the fact that it is more found in other diseases, & is also associated with other morbidities of the lungs. I have been successful in proving that the tubercles are not in the lungs, but in the skin, in the midst of this substance. The observations of M. are not in organization, as he has never seen their appearance. Such evidence however is only negative, and cannot disprove its existence.

The exact nature of the second form of tubercle, has been a matter of controversy, but generally we regard it as a distinct kind, its size varying from the size of a millet seed, to that of a pea. It is sometimes found existing uniformly in conjunction, with the first-form mentioned, both Lacunae and Louis regard them as the first-stage of it. Bayle, by whom the name of *l'émulsion* is given to them in cartilagineous, and of a nature entirely distinct from tubercle, constituting a peculiar form of phthisis, and not existing alone, but always associated with the tubercular. Andral conceived them to be a kind of pulmonary cicatrix, the result of chronic inflammation, others among whom is Dr. Caspwell, consider them as one form of tubercle, but not necessarily the primary, sometimes preceding the other variety, as we have seen. But they like that the latter kind exist in organs, where the former is never observed. From the fact first stated, of the two forms almost invariably existing together,

and from their having been observed in the the various stages of transformation, there can be no doubt of their tubercular nature. It appears also true that what is usually described as crude tubercle is very often if not invariably, a subsequent stage of the milky granulations. The fact of our often finding at various heights successively from above downwards in the lungs first excavations, then softened tubercles, crude tubercles, and lastly gray, sometimes parenchymatous granulations is very strong evidence of the truth of this position. This being now well brought out, the direction of the tubercular deposition,

Form of Tubercle. Tubercles are usually described as being of a round form, but this condition so often entering into the definition of a tubercle, is by no means invariably present. It is wholly an accidental circumstance depending upon their locality, or the nature of the tissue in which they are deposited. When the particles of tuberculous matter are first deposited, they are of a large & irregular size, but as they are deposited in any & so distance like the tissue, they assume a rounded form, from the uniform pressure

which they receive on every side, when deposited in the areolar tissue, they take the form of the cells of areolar tissue, & in the lungs they take the form of alveoli, except that the pulmonary vessels & bronchi, then in the air vessels, they are enlarged to the form of lobes, as in alveoli. In the cells, & ducts is a central cavity, they are joined to the surrounding surface, but in bronchia, they take the cylindrical form of their receptacle.

Pathology of Pus

The various morbid deposits which take place in the body, may be divided into two classes, & two orders, the former embracing all those products, which have an analogy to some of the natural tissues of the body - the latter proceeding from a resistance. Thus, the morbid deposits like the adipose tissue, are analogous, they form a tumor of the same class. Pus is the morbid substance of the tissue of the body, & all the morbid products.

Inflammation as a cause of Tubercle.

On this subject there has been much controversy, and principally it would seem from a misapprehension of the term inflammation. Thus, while some use it as almost synonymous with diseased action, others mean by it, simply, common, phlogogenic inflammation. In the latter, restricted sense, it can have no agency in the production, other than an exciting cause, often determining the seat of the deposition, in a tubercular diathesis. Diseased action is governed by local laws, and hence is always uniform, under similar circumstances. An inflammation is a healthy condition never so altered by its products, the "py" of that derivation is wholly necessary to its development, and is to be considered as a symptom of inflammation, perceptible, and more anatomical investigation will let us know of its extent, and usually attended with inflammation and symptoms thereof arising, and the first evidence we have of its existence, but the effort has been mistaken for the cause of the disease, and for the constitution, is principally understood, from a

want of proper investigation, or from their dis-
form under which it appears. Correct views
of the precise nature of tubercles, and of the exact
nature of the morbid action upon which it de-
pends, being the basis of all the indications
of treatment, it was formerly considered of the
highest importance to settle these points, and
to determine the exact limits of the
measures to subdue an inflammation arising from
the irritability of the tubercular matter, or arising
perhaps from some cause, and tending to produce
the formation of the tubercular mass. In some cases
it is true, still it should be done with caution, as
the sanguiferous constitution is altered, and depleting measures
however necessary, can never remove this diathesis.

The exact nature of the tubercular diathesis
it seems difficult to determine. Some suppose that
it depends upon a specific virus, and that the
specificity of the virus is the producing phenomenon
of the tubercles. In this respect it is more
analogous to syphilis, but it is not so, as it does
not pass from one person to another in the same manner.

chemical tests have never been able to detect the presence of such virus in the circulation. This virus may be transmitted from parent to child, and the first well authenticated of tubercular deposition being actually taken place to a case of tubercular deposit in the lungs, is supposed to, since the above theory. The distance between any such position cannot be demonstrated, and in our present ignorance of the modus operandi of poisons, I do not conceive that the settlement of the question would add much to our knowledge of the pathology of the disease. It is not necessary to suppose, in the case above mentioned that the tuberculous deposition in the lungs was caused by a contagio as principle would give the notion, as the syphilitic virus has been communicated. It might result from the vitality of the material of organisation generated by the matter, there not having the power of transmitting them to distant parts of the body, the head to which I consider the true theory of the formation of tubercle.

The plastic material, from

in the same manner, by a change of position, or derangement of the nutritive or assimilating function, becomes incapable of transformation into complete fibres, and thus forming an imperfect tubule, but these tubules, being in formative process, are abortive in their growth, and form that is properly designated the imperfect tubule.

The comparative degree the difference between the material of healthy and diseased material would appear to be such, that the former is composed of the substances as constituted by the state of the animal compound, which is not opposed to the law of assimilation until it is found through the condition of fibres, while the latter is opposed to the law of assimilation which process withholds the law of assimilation and only requires the material being assimilated to make it to form into a regular structure.

It may be argued, from the view that tubules in the blood are with the most common of a portion of it, that it is a tubule, but the author elsewhere calls the material of tubule anoplaste.

a imperfectly organised, making a subsequent
change after it leaves the circulating system,
or it may finally result from a local defect in
the assimilating process. But an abnormal state
of the blood is the primary cause of this deranged
action by affording imperfect materials for healthy
organisation. The disease is therefore really constitu-
tional & if tubercle existed ready formed in the
circulation.

Seat of Tubercle.

Pathologists have usually con-
sidered the cellular tissue, the most common seat
of tubercle. Dr Casmell however asserts, that in
relation to the different tissues, systems and organs of
the body, the mucous system is by far the most
frequent seat of tuberculous matter, and that its
seat of election is the free surface of mucous mem-
branes. In the midst of these conflicting views
it is difficult to decide which tissue is the favorite
seat of the deposit, and owing to changes which
must take place in the structure of the part
before observation can be made, the solution of
the question, must be very difficult.

The cellular tissue, must be a very common seat of tubercle, as in the brain, and other organs into whose structure mucous tissue does not enter.

Locality. - Tubercle has been observed in almost every organ of the body, and where the structure is strongly marked, it exists in very many of them simultaneously.

It probably more limits itself to one organ for any great length of time. Some structures however are much more readily affected than others differing in this respect at different periods of life.

In the adult the lungs are known to be almost invariably affected, if the disease has located itself at all.

M. Louis in three hundred and fifty eight cases found but one exception. Other pathologists have found the exceptions more numerous.

It has been found in one hundred cases, found no other exceptions. M. Louis in one hundred and fifty two autopsies found the lungs free from tubercles but six times. It seems to be the more common opinion at the present time that the left lung is more frequently affected than the right. This is the

opinion of Louis Carnwell, Gross, and most modern authors. In opposition we have the high authority of Laennec, also of Garbhard, Hume, Chess, and Mackintosh. The question therefore cannot be considered as settled. Its appearance in a given number of cases in one lung, more frequently than in the other, may be merely accidental. The summit of the lung is almost invariably the primary seat of the deposit, and this seems to have reference to the several lobes of which the lung consists. Thus portions of the superior lobes are often affected, when parts of the lobe next inferior, corresponding in height are perfectly sound. The superior and posterior part of the upper lobe of the lung is usually the first seat of tubercles. Dr Carnwell observes that there is an exception to this rule when the deposition has not been preceded by local disease, such as circumscribed bronchitis, pneumonia or pleurisy. Various theories have been advanced to account for this localization of the disease to particular portions of the lungs. Carnwell considering that the

tuberculous matter is separated from the blood and deposited on the free surface of mucous and serous tissues, thinks that it may depend in a great measure on a greater or less degree of facility afforded to its escape. The inferior lobes have much greater muscular activity, resistant to motion, thus facilitating the expansion of the matter deposited. Now while he admits that the confined and compressed state of the superior lobes of the respiratory organs, should exert an injurious influence, predisposing them to disease, suggests an explanation derived from the laws of gravity.

The superior lobes in the erect position of the body, are not as accessible to the blood, and from this cause congestions, are more liable to arise, determining the development of tubercle. All these explanations of a well known fact, must be mere conjecture, but the view of Casswell appears more plausible, not that there is much greater facility afforded to the escape of the tuberculous matter from the free expansion allowed to the lower sides of the lungs, but from the increased vigor which the circulation and nutrition of the organs portions acquire from the

condition. The greater frequency of tubercular
deposition in the lungs of adults, than of children
may admit perhaps of explanation. We have here
suggested that this deposition is facilitated by passive
congestion. When the lungs are kept in torpid con-
dition, depending chiefly on such congestions are promoted
the functions of the lungs by crying in infants, and
and by the exercise of the vocal organs attending
the active and interesting sports of childhood
must have a powerful influence in keeping up a
good circulation and promoting the nutrition of
these organs. Next to the lungs in point of
frequency of the tubercular deposition, according to Linné
are the small intestines, and this is confirmed in the
great majority of cases says Cassell to the lower
portion of the ileum, more frequently to the
upper part of the sigmoid of Bernier. The numerous
glands are affected in the following order in point
of frequency: - mesenteric, caecal and the liver.
The spleen is then affected in the adult; the same
may be said of the brain. Of the serous mem-
branes the pleura and peritoneum are frequently

affected, the pericardium but seldom.

Tubercles are also found in the urinary and reproductive organs, and occasionally in the osseous system. No organ or tissue of the body may be free from the disease, though in some as in cartilage and muscle they have seldom been detected.

Progress of Tubercle.

Tubercle may remain dormant in the system for an indefinite period but eventually it becomes awakened, and by the action of the vascular part it passes into a channel by which it escapes from the system, the route by which this system is expelled is variously explained.

Some consider tubercle to be an irreparable defect, but as it is partially & wholly expelled by the excreting power of its own internal action.

Others on the contrary are inclined to be in regard to it as the mechanical result of fluids excreted from the surrounding parts, as the effect of their irritation and consequent inflammation caused by their action. Some however have advocated the organic nature of tubercle, believe it capable of

undergoing chemical changes. The evidence, from
anatomical instructions appears contradictory.

Assume now that a tubercle always begins to
exist in the center. Can then the center
becoming this to be deposited, and the change of the
organic nature of the product, due to the
scurvy of explaining the cause of the appearance shown
by every pathological. This has been described satisfactorily
to himself, and substantially as follows: assuming
that the tubercular matter is generally deposited upon
the air cells. When this it may be compared to the
surface of either a central depression or cavity, which
then be left filled with mucus, possibly secreted
by the membrane. Again, tubercular matter existing
in a point, approximate to a massive deposit
and in the manner portions of lung may become
surrounded by tubercular matter, and these portions
being inflamed or diseased produce the appearance
shown. This ingenious mode of accounting for
the appearance, cannot solve the question.

The inability of the vital mechanical change in the
tubercle itself to take place as it first be proved.

Cummin, Clark and Alton, three of the most-
able & intelligent of our countrymen, and
the European nature of tubercle, however, and
their view of its always taking place in the
cavities, and of its not being caused at any
part of the tubercle. These who consider tubercu-
les matter as identical with coagulable lymph
would necessarily believe it susceptible of
organisation under certain circumstances.

The view now before taken of the pathology
of tubercle, supposes it to be a local with a
degree of vitality. As an objection to this opinion
its non-vascularity has been urged, in proof of
which, it is stated its mobility & the exudate
it is not containing, admitting it to be true,

vascularity is not essential to vitality,
because the tissues are nourished by means of cells
in this manner plants receive their nourishment,
very recently however, certain virid pathogens have
been injected in infecting tubercles, thus establishing
their vitality beyond a doubt. We infer there-
fore that the softening of tubercles may arise spontaneously

independent of any extraneous influence. This change may first arise in any portion of the product. The softness of the deposit affords no reason for supposing its softening invariably appears in the center. I think there can be no doubt that this process is equally effected also by the irritation of the tissues surrounding tubercle as the result of the irritative product. I am aware of the objection of McLeod founded on the appearance of the mucous membrane in the vicinity of tubercles.

He ascertained that the mucous membrane of the bronchia frequently did not present any alteration in the neighborhood of crude tubercles and that it was almost always thickened and of a red color in the vicinity of cavities. From this circumstance he was led to conclude, that this inflammation being posterior to the softening of the tubercle cannot be considered as their cause, but rather as the effect of the irritation of the matter poured into the bronchia from the cavity. This argument though plausible I do not deem conclusive. This softened matter may produce irritation is very probable from the additional fact of the ulceration of the trachea and larynx being situated at

the posterior part, and on the laryngeal surface of the epiglottis, these parts coming in contact with a greater quantity of the discharge. It is a remarkable fact that tubercle may exist for a long time in the lungs without exciting inflammation, and thus, we find the membrane in their vicinity apparently healthy as we stated. This circumstance appears to me to afford additional evidence of the vitality of tubercle, as it is difficult to conceive how an inorganic substance, not encysted, can remain to such a degree harmless in the lungs. But eventually, and perhaps in consequence of the tubercular matter not being able to sustain its vitality by inflammation arising, and liquids are found breaking down the mass. This effect is immediate, and might readily be mistaken as has been by Louis, for the cause of the inflammation of the membrane. The action is probably reciprocal, tubercle first producing inflammation, and its products, by which it is broken down, and the softest matter again increasing the inflammation. We have thus described the softening of tubercle to two causes first to a spontaneous change in the product itself, and secondly from the ulceration of the surrounding tissue, as the effect of its irritation.

In an article on the general pathology of tubercle, I do not propose to treat of all the morbid phenomena, to which it may give rise. These must of course vary with the nature of its locality, the functions of the various organs which are its seat - must be impeded from the first, and if the disease progresses eventually destroyed. Hence it follows that the danger depends upon the importance of this function in the animal economy. But as we have seen tubercular deposition is never long limited to one organ, and in the adult the lungs, as we have seen, are almost invariably affected.

The curability of tuberculous diseases is now established beyond a doubt. At an early period of life, the disease is often confined to the lymphatic glands, the tuberculous matter of which these scrofulous enlargements consist, is often discharged by suppuration, and it occasionally disappears even without the process - by absorption. Similar results take place in the lungs in that form of the disease, constituting phthisis. This copious sion of the product by softening and expectoration, would of course cure the disease, did it not depend upon a morbid diathesis, which remaining, fresh depositions are constantly taking place. There can be no doubt that a spontaneous cure is occasionally effected in this manner. All the physical signs of tubercle have been present and indicating.

the existence of a cavity, and subsequently when the point has been destroyed by some other affection, a cavity has been found in that portion of the lung, in which the excavation had formerly existed.

There is still another termination of tubercle which is more interesting. All its animal portions may be absorbed, leaving a cutaneous mass, which becomes enclosed by an accidental tissue, formed by an effusion of coagulable lymph, and may then remain permanent in the system through life. These shelly concretions are sometimes expected of an appearance resembling dry mortar.

A description of the symptoms, and treatment of tubercle, in its various stages, and complications, will need in different regions, does not properly belong to a general dissertation on the subject.

Of the various predisposing and exciting causes of tubercle my limits will not allow me to speak, important as they must be considered. In a word, they may be stated to be all those agencies which tend to deprive the the powers of the system, and which act especially to derange the process of nutrition; - the development of tubercle resulting, as we have endeavored to prove, from a deficiency of vitality, in the nutritive, or assimilating function.

W. H. Campbell.

IX.

Dissertation
on
The Inhalation of Ether.

By
Liebbers Eaton Marsh,
of Leverett, Mass.
Candidate for the Degree of Doctor in Medicine.



On the Inhalation of the Vapor of Ether

Towards the close of the year 1846. Drs. Jackson and Morton of Boston recommended the Inhalation of the Vapor of Ether, for the purpose of preventing the pain attendant upon surgical operations; also as a remedy for some forms of disease, which, though highly distressing, are unaccompanied with acute pain; and the success which has followed its use, both in their hands, and in the hands of others, has given it a great degree of celebrity and popularity. Truly marvellous have been its effects. Not only does it render patients unconscious of suffering, while undergoing the most formidable and painful

2. operations, but it even annihilates sensation. during the progress of labor, the uterus still going on with its parturient efforts, and accomplishing its task with unprecedented rapidity and safety.

It also as a therapeutic agent, allays the acute and agonizing pains of neuralgic diseases, and in some of the most distressing and alarming spasmodic affections, has not only put a stop to the violent and unnatural action of the muscles, but has frequently subdued what without it would probably have proved fatal.

Still, however, it is not utterly harmless, for death has occurred which has been attributed to its influence. And here the inquiry arises:—

Whether a practitioner is justifiable in using a remedy, merely because it has the power of rendering his patient unconscious of suffering, without possessing any other beneficial quality?

In answering this inquiry, it will be necessary to examine some of the facts, deduced from the experience and observation of those distinguished gentlemen, who have used it; seen its effects, and communicated their knowledge to the world.

And in the first place let us consider the apparatus, and the mode of exhibition.

The common apparatus used in this country, is a glass vessel, with two tubular openings, one of which has a mouth piece, in the throat of which is a valve. The valve closes during inspiration, but opens upon expiration, in order to give vent to the air of the lungs. The other opening, is for the introduction of a sponge, afterwards saturated with ether, which is admitted into the gubular

part of the apparatus. This apparatus has been objected to, and ^{perhaps} with reason, because, it is not provided with any means for regulating the proportions of vapor of ether, and of air; and it has a worse fault; that of being cooled by the evaporation of the ether taking place within.

The air is cooled in passing through, and takes up less and less vapor as the process goes on, and sometimes when the patient is on the point of becoming insensible, no farther effect is produced; or when seemingly insensible, is aroused by the sight of the surgeon.

4 Ether possesses in an eminent degree the property of becoming converted into vapor. When in contact with air, its vapor mixes with, and expands it; and the quantity of vapor, that will thus mix with the air, increases with the temperature, in the same ratio, that the elastic force of the vapor of ether, bears to the temperature.

By taking advantage of this law, of the quantity of ether vapor that will mix with air at different temperatures, viz. at thirty degrees Fahrenheit, 100 cubic inches of air take up 20 cubic inches of vapor, and become 120 cubic inches; at about 57°, they take up 100 and are expanded to 200 cubic inches; above this temperature, the quantity of vapor increases with enormous rapidity, till at 100°, it excludes the air entirely — we are enabled to regulate the proportion of air, and of vapor, that a person breathes. In order to do this, it is only necessary to bring the air & ether sufficiently in contact, and to regulate the temperature. But, what is the effect produced upon the volume of ether-vapor when it reaches the air-passages? —

In the lungs, it comes in contact with a surface heated to 98° or 100° of Fahrenheit. Will not the ether vapor then expand, so as to fill the cavity of the chest, and thus exclude the air entirely? We are of opinion that, cool the apparatus as you may, this cooling has no control over the ether vapor after it reaches the trachea. Some think that sponge alone, is ^{the} best apparatus, & thus describe the mode of using it. Get a piece of sponge, quite clean and free from grit, large enough to cover the mouth and nostrils; immerse it in water about 50° below boiling heat; squeeze it as dry as you can, pour the quantity of ether; (from half an ounce to an ounce at a time will be sufficient), into a tumbler, or glass basin; dip your sponge in; and it is then ready for use. Perhaps, the following solution will prove to be more effectual than simply the ether; prepared by adding 2 drams of Alcum Ethereum, to 2 ounces of pure rectified sulphuric Ether. Should the vapor be too powerful for the patient; hold the sponge at a little

distance from the mouth, gradually advancing it as the patient can bear it. Probably the sponge is the best apparatus in use. There is however one other mode of administering the ether vapor, which must ^{in some cases} be preferable to the sponge.

It has the advantage of being economical as but a very small quantity of ether, probably not a drachm, has been required to produce its full effects upon the system. It consists simply in applying a vial of ether to one nostril, while the other nostril & the mouth are closed, and making several deep inspirations.

However tripling the amount of injury has been, in proportion to the frequency, with which ether inhalation has been practised, there cannot be a question, that an agent capable of inducing such remarkable and potent effects, ought not to be regarded as a "scientific toy", or even to be employed at all by persons unacquainted with the principles of Physiology and Pathology. And the following precautions are considered requisite in its administration, viz

- 1st Never to exhibit the ether vapor without having previously auscultated the heart and lungs.
- 2nd Never to employ it in persons who have signs of obstructive disease of the heart to any extent.
- 3rd Never to employ it in persons who have any considerable portion of a lung unfitted for respiration.
- 4th In persons with short necks, with tendency to cerebral congestion its employment is not without danger; also, perhaps, in those with disposition to insanity, or other recurrent diseases of cerebral origin.
- 5th A 2^d operation of consequence should be performed under the influence of ether without a preliminary trial exhibition; while the ether employed should be the purest washed Sulphuric Ether.

The Time which is required to produce insensibility, varies according to the degree of skill with which the vapor is exhibited. It is produced in some cases in two minutes, and in others only imperfectly induced at the expiration of twenty minutes. Insensibility is more rapidly produced in children and women than in men.

The Period during which insensibility remains, is also subject to variation,—

2 The average duration may be stated to be from two to twenty minutes. Sometimes, and especially in those ill-managed cases, in which the patient is more affected than ethrized, he does not perfectly recover his consciousness, for half an hour or more. The restoration is sometimes gradual, at others sudden; the patient instantly starting as from a dream. He is for a moment or two somewhat incoherent, and staggers about as if half drunk. No ill effects are left behind in the majority of cases, but in some, more or less headache remains for the rest of the day.

Patients while under the influence of Vapor of Ether, can both see and hear.

They will act from their sight, and reply to the questions proposed to them without being aware of what they are doing.

It may be well, therefore, to have the eyes bandaged previous to an operation, and also, to have silence observed during the time the effect is required to be kept up.

We come next to a consideration of surgical operations, performed while the subjects of them were under the influence of the vapor of Ether. Our limits will not allow us to give a minute description of any of the great number of operations that have been performed, ^{therefore} and a brief synopsis must suffice.

And 1st Amputation of both thighs of a young man aged 23. He was put under the influence of ether vapor in one minute and a half, and the limbs were both amputated in eighty-five seconds.

The left thigh was first removed, and while the bloodvessels were being secured, the right was amputated. The influence of the ether was most marked; his pulse rose under it, and he appeared to be in a tranquil sleep. The blood in the small arteries, was much darker than usual, so that it was really difficult to distinguish it from venous blood; and the muscles did not retract as they are wont in amputation from recent accident; When he had recovered from the effects of the ether, he said that he knew something was being done to him;

Dr. J. M. Smith, Nov. 7, 1846.

11 But he had nearly felt no pain.

2nd), Excision of the scapula and one half of the clavicle; Successful.

3rd), Removal of the breast of a female, aged 58 years, containing a carcinomatous tumor.

4th), Reduction of dislocation of the Shoulder beneath the Pectoral muscle, three weeks after the occurrence of the accident.

5th), Excision of immense crops of warts covering the glands and prepuce.

6th), Two cases of removal of toe-nail by splitting and evulsion.

7th), Three amputations of the thigh for diseased knee joint.

8th), Extraction of teeth without pain, in a great number of instances.

In all these cases no unpropitious result followed. We might mention many more cases like the preceding, as every medical journal contains accounts of operations performed under the influence of ether vapor, but we deem it unnecessary to do so. By the aid of repeated etherization a case of well marked Trismus

Tetanus, is departed as successfully treated.

In an analogous case, ^{however} the ether was unsuccessful.— In the treatment of spasmodic Asthma, the vapor of ether has long been used with success. Also in Pertussis, the paroxysms of coughing, are positively cut short by employing the vapor of ether, when the fit is perceived to be coming on. The vapor of ether has lately been administered to an insane patient, who had no rest night or day for a period of nearly five months. The patient became immediately calm, and after five inspirations, she fell into a state of insensibility, which lasted twenty five minutes.

Let us now turn over the leaf and see what is said on the other side of the question, with regard to the justifiability of the use of the Vapor of Ether.

If we endeavor to inquire into the physiological effects, resulting from the inhalation of the vapor of ether, one fact is obvious, that it prevents the decarbonization of the blood; by depriving the lungs,

either totally or partially of oxygen. For this reason, black or venous blood must circulate through the arteries as well as the veins; and by the impression it makes upon the brain, occasion Apoplexy, in the same manner that this effect is produced by immersion in water, or the mephitic gases, or by strangulation. Of this there can be no doubt. It having been proved by experiments upon animals, and by examination after death of some of those persons who have died after inhaling the ether vapor. Yet notwithstanding this palpable fact, we read of patients being carried from the operating theatre, in a state of utter unconscionness, and apparently with the utmost non-chalance on the part of the operator; who takes it for granted, that as soon as the effects of the ether vapor vanish, the patient will arouse from his state of insensibility.

But sometimes, this state persists so long, that alarm is excited, and then measures are resorted to in order to overcome it.

And what are those measures? —

What means have been adopted to rouse the patient from this collapsed condition? Oh, even Echo answers, what? Surely, if we voluntarily administer a poison, we ought to know its antidote.

Yet none has been discovered on which we can rely; and those who have been resuscitated from the comatose state induced by the inhalation of ether, seem to have owed their recovery more to the vis-medicatrix natura than to any sanifying influence of the means administered. Even Oxygen Gas, which one would suppose best calculated to neutralize, or subdue the pernicious effects of the ether, is of no avail whatever.

It rather has a tendency to increase the morbid effect than to relieve it. But, Death, has occurred from the inhalation of the vapor of Ether. The death of Mrs. Parkinson, is attributed to this agent.

In the case of lithotomy, related by Mr. Nun, the ether was evidently fatal; also in the two cases of M. Jobert in France. It is probable that if the deaths were faithfully recorded, we should find that in many more instances they were not from ordinary causes.

14 The following, are some of the objections at present brought against the inhalation of ether vapor.

In the first place, it is impossible before hand to fix the dose of the vapor; that will be required to produce given effects, upon any patient.

Then it is not always easy to ascertain when enough has been administered. Again, we cannot predicate the form which the intoxication may assume—whether that of Coma, or Excitement; the latter would be an evil, in the performance of any operation; and in some, Turnia and Lithotomy for instance,—a sudden movement of the patient might endanger his life.

Unconsciousness of suffering is not always desirable, for we sometimes wish to know if nervous cords, are unnecessarily touched. And, besides all this, very serious consequences have already resulted from its use, affections of the nervous system, approaching apoplexy, Syncope, dyspnea; and Spitting of blood.

Accredited and scientific gentleman* in answer to certain queries on the inquiries, &c.

* Mr. Benjamin Moore Jr.

of the administration of Ether, remained; "that the proximate as well as the immediate effects should not be overlooked; as he believed the effects of ether were progressive; and that a man having been under its influence, might die in the course of five days, as well as of twenty-four hours. He had known a limb, five days after death, smelt strongly of the ether; the stump having become gangrenous. He believed it to be a poisonous and dangerous remedy, attended with the greatest risk, and requiring the most profound caution in its use" -

In parts operated upon under the influence of Ether, there is no muscular contraction, no retraction of the larger vessels, and the smaller ones continue to pour out their contents.

With the exception of the flow of blood, it is like cutting through dead flesh, and the parts fall, as it were, asunder.

The conclusion, which we naturally would infer from the above facts, is, that the mere prevention of pain is not a justifiable plea for placing a man's life in jeopardy. —

16 Pain may be considered a premonitory condition, no doubt pitting parts, the subject of lesions, to reparatory action; and therefore we ^{may} should feel averse to prevent it. Pain is preventive, preservative, and curative.

The sensation of pain, rouses us suddenly from our sleep, and impels us to flee from impending danger; the dread of pain preserves us from that, which would prove prejudicial to moral, as well as physical health, it restrains us from rushing madly into the vortex of vice; merely for the sake of the transient pleasure it affords; and actual pain, under disease, induces us to resort to those means best calculated to remove its cause. Pain, may, in fact be considered as a sentinel, wisely stationed on the walls of the citadel of life, to guard it against danger, or to give warning of its approach. A humane physician, or surgeon, then, should weigh well the consequences of driving this sentinel from his post, or of lulling him to sleep while there.—

12

2
Numerous cases are reported, in which not only ^{the} was suffering removed or alleviated, during parturition, but even the process itself, conducted to a safe and speedy issue under the administration of the Vapor of Ether.

Still, however, we cannot but deprecate the introduction of this adjuvant into obstetric practice. A quick and easy labor, is not, consequently, a safe one, for we must look at its ^{consequences} results; and there is no pain which suffering humanity is called upon to endure, attended with so little danger, and so quickly forgotten, as that which attends upon parturient effort.

In ninety-nine cases out of a hundred, there is no danger in this process without the use of ether. (we would not venture to say the same with its use) and — notwithstanding the extreme suffering which is consequent, and, naturally, ought to be consequent on the

act of parturition — in an equal proportion of cases, the woman forgets her sufferings the moment her child is born; unless it be those after-pains which the vis-medicalrix natura brings into play, to remove the congestion, and diminish the volume of the puerperal womb.

Were it possible to restrict the administration of the vapor of Ether, to the most skillful and judicious physicians, as has recently been done by the Grand Duke of Hesse-Darmstadt — who has prohibited the lower grade of medical practitioners, (officers desante) dentists, and midwives, in his dominion, from using it in their operations, — our apprehensions would be less serious. But, in our blessed land of liberty, where big boys and little boys, and humbugs, equally operate with impunity, such exclusiveness is repudiated; and, therefore they who have a name to gain, as well as those who have no name to lose, will in all probability, be most eager

to use it, even on hazardous, as well as unnecessary occasions. Hence, many respectable physicians, though dubious as to its propriety, may be driven to administer it in self defence. For we are well aware, how strong is the desire of freedom from suffering, where pain is dreaded, and how natural it is to the afflicted to have recourse to those, who promise them such immunity, and to give them the preference over the more prudent and skillful physician; and we also well know what a high reputation, for the time being, clings to that accoucheur, and what a halo of glory encircles him, who is notorious for expediting labor, and rendering it easy, be the consequences what they may. But such renown is not generally durable. Death, by flooding, consequent upon the collapse of an overrated womb; or from epilepsy, congestion of the brain; or even from fire,

20 originating from the combustibility of the material used; or from some other cause, equally formidable, and equally attributable to the vapor of ether, will inevitably blast such ill-gotten laurels.

There, may be cases, in which this article will prove serviceable, but it should not be administered merely to allay the fears and remove the sufferings of a female destitute of common fortitude.

It has been stated* that all the narcotic effects of ether may be as readily produced by causing the vapor to pass into the Rectum, as by inhalation.

The method of proceeding, is first to evacuate the contents of the rectum, by an enema, then to introduce an elastic pipe, which is connected with some receptacle, which is half-filled with ether. This reservoir, is then

* By M^r. Pirogoff

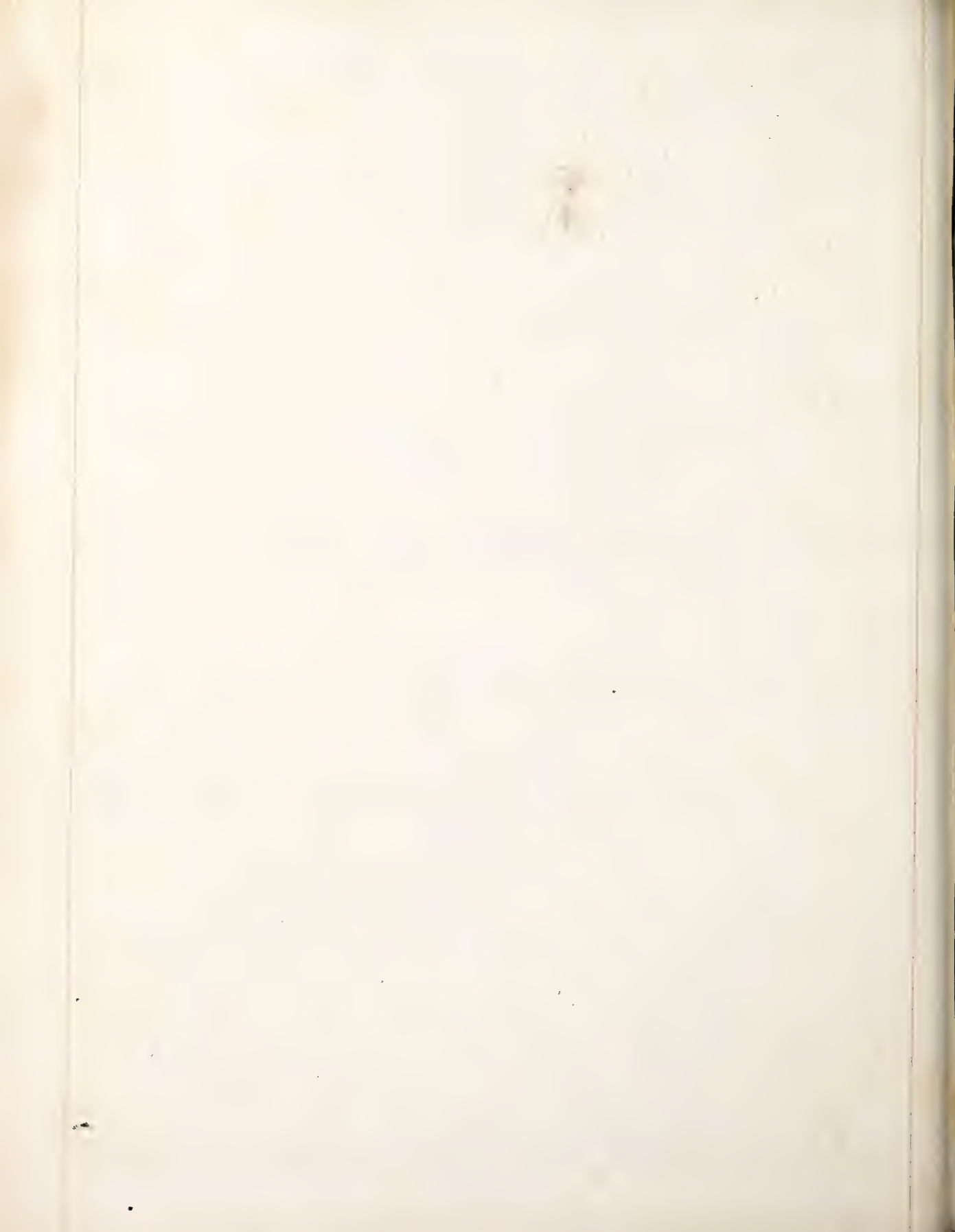
covered with a towel, wet with warm water, 21.
and evaporation speedily commences, and
the vapor, mixed with air, passes into the
lungs. The breath is impregnated with the odor
of ether in ten minutes, and all the symptoms
of narcotism are induced in five minutes.*

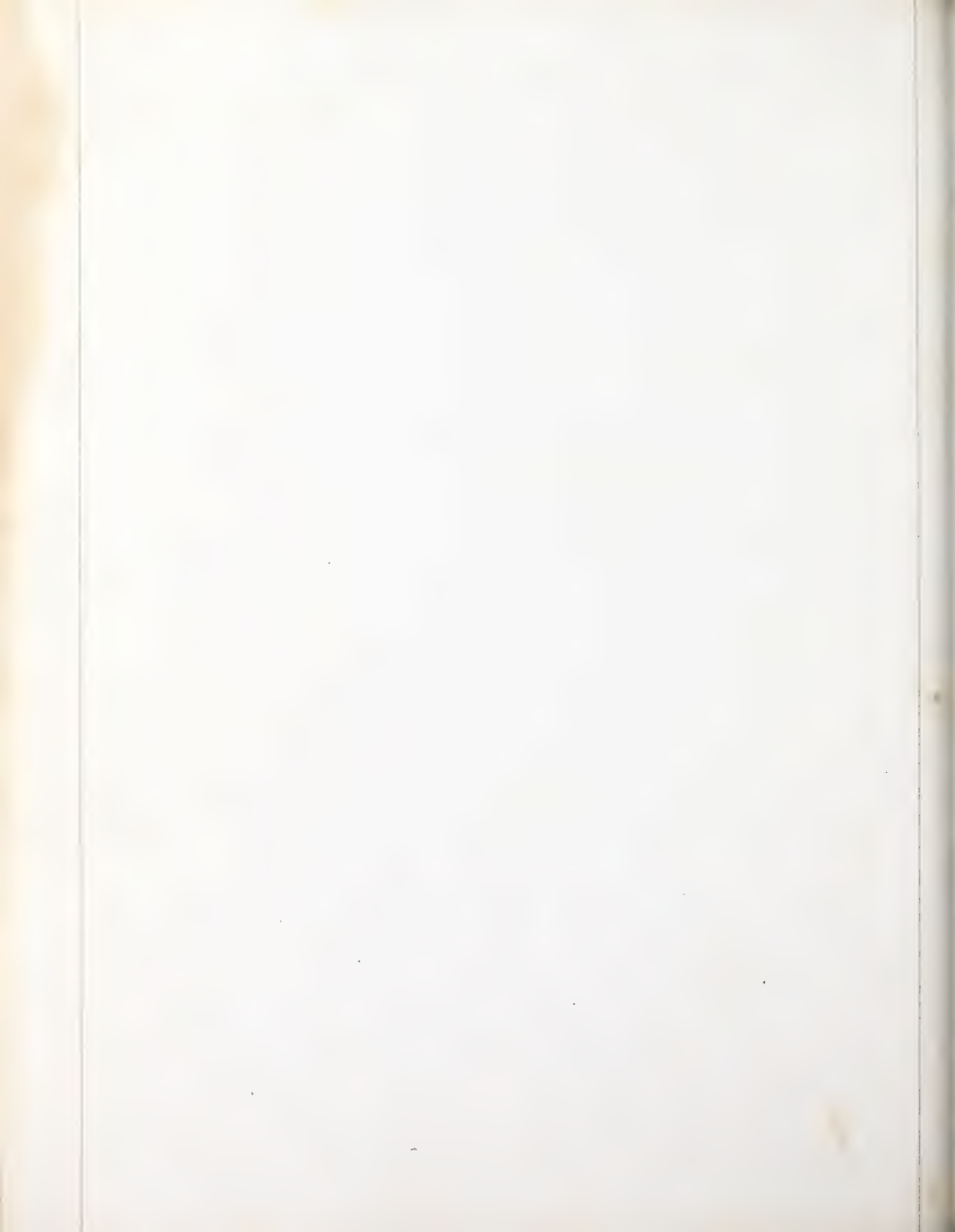
This modification is undoubtedly worthy
of trial, as by it all the objections heretofore
brought against the ether inhalation, on the
score of asphyxia, are completely done
away with.

We have now concluded what we
had intended to say upon the inhalation of the vapor
of ether. We are fully aware, that much more might
be said of it, and ought to be said, in order to do
justice to it, but we think we have said enough
to enable an opinion to be formed, with regard
to the suitability of its use, and to what cases
its use should be restricted. And of which
is respectfully submitted, by

Lebens Eden Marsh, of Lowell, Mass.

* So said the Professor Mr. P.





~~X~~,

Dissertation
on
Phthisis.

By
Elisha Smith Peck,
of Lyme,

Candidate for the Degree of Doctor in Medicine.



Tubercular Phthisis

The above named disease, of which it is my purpose to give a short description, annually carries off a large number of the human family. And from the very nature of the disease, they are previously subjected to great, and often protracted suffering. Hence a careful, and patient investigation is most clearly demanded, of those who are called upon to treat the disease. And in truth it may be said, the demand has been fully regarded; as from the days of Hippocrates down to the present, untiring research has been made by those on whom the arduous and philanthropic^{duty} has devolved, into the pathology and treatment of the disease. Thus a vast amount of knowledge has been accumulated upon this subject. Of this, it is our purpose to give a short sketch. We would remark previously that it is not

our purpose to extend it beyond that portion which relates to tubercular phthisis as confined to the lungs.

Without dispute, it will be admitted that this disease is hereditary; that is, that those who suffer from it have received a taint from their parents, probably in every case. That such is the case has most clearly been shown, over and over again, by long and careful observation. When the disease has been once originated, it is almost always transmitted from one generation to another; or to speak perhaps more clearly, or rather correctly, a predisposition to the disease is transmitted.

As already intimated, it is a very fatal disease; since few if any who are attacked, the disease becoming fully developed, ever escape, though all the power of the healing art be assiduously applied for their rescue. Many experiments have been tried, and new modes of treatment devised, both by the learned, and ingenious, but all to no purpose. The foe steady to his post, has continued his work of death till finally fully accomplished, notwithstanding the Materia Medica

may have been ably arrayed against him. Says Eberle,
"tubercular consumption may be regarded as incurable."
Again, "it is now however the general opinion of those
who are acquainted with the actual state of our knowledge
respecting the pathology of this disease, that the tubercular
affection, like cancer, is absolutely incurable; inasmuch
as nature's efforts towards effecting a cure are injurious,
and those of art useless." Yet he admits that it is in
some cases cured by nature's efforts, as for instance
when the tubercles are deposited in only one portion of
the lungs, which becoming softened, and expectorated,
there being no more deposited, a kind of cicatrix
is formed of a semi-cartilaginous structure, and the
patient recovers. Now that such favorable terminations
may be, and often is, promoted by appropriate medicine,
most probably we ought not to doubt, and yet to
prove such to be the fact may be difficult.

The formation or deposition of tubercles in the
lungs, is closely connected with a scrofulous diathesis.
The tubercles themselves consist of unorganised matter
of a yellowish color. It is deposited from the blood
and most commonly upon the free surfaces of mucous

membranes. The form of the matter is that of the tissue in which it is deposited, being either round or tubular according to the shape of the tissue. When such deposition takes place in the lungs, it is perhaps always either in the pulmonary vessels or in the small ramifications of the bronchi. It was formerly thought, that the tubercular matter after having been deposited, and lying a longer or shorter time in a quiet state, gradually softened, commencing at the center of the tubercle. We are now taught however, that such is not the fact, but that they have such appearance when cut across arising from the manner in which they are excited, it being from the inner walls of the vessels or bronchi. Hence the matter is not as dense in the middle of the tubercle, as on the out side; as in most cases they would not in all probability be intirely filled. And still further is the softening of the tubercles accounted for, by supposing the tissue by which they are surrounded, and in which they are situated to become pressed upon, and from this, or some other exciting cause, to take on inflammation, finally suppurate, and the pus or purulent matter is

infiltrated into, and around the tubercles, which are thus loosened, softened, and finally expectorated.

It may be proper to remark in this connection, that careful observation has shown, that tubercles are not deposited in the commencement of the disease, at random, over the lungs; but in their upper and posterior portions, most commonly; a knowledge of which may be considered of the highest importance in practice, and particularly so, since other inflammations most frequently commence in the lower portions.

Most usually this disease commences with aching pains, more or less severe, in some portion of the chest, with also a sense of tightness, accompanied with a dry cough which is much increased by violent exertion of any kind. The respiration is also commonly disturbed, being more short and quick than usual.

These symptoms continuing to increase, febrile irritation makes its appearance, coming on more usually toward evening, accompanied by a somewhat quickened pulse. A paroxysm of coughing almost always occurs in the morning, at which time the patient rises from bed feeling very feeble and languid. He will

be very sensitive to a change of temperature, and liable to take cold from the slightest exposure, which will most surely fasten upon the lungs; after being sensible there when in no other portion of the system. The bowels will be disturbed in their functions, becoming costive usually. And the tongue though commonly clean, sometimes will be covered with a thin, and white fur.

As progress is made by the disease the paroxysms are more frequent, and severe, disturbing the patient at night, and thus preventing his usual amount of quiet rest. The white of the eye will appear to increase in whiteness. The skin and lips will be dry, particularly in the afternoon. In some cases slight chills will make their appearance, once in three or four days, and in some instances, every day, followed by some fever together with a well defined red spot seen upon one or both cheeks. An unpleasant heat is also very commonly felt in the palms of the hands, or soles of the feet. The breathing which is already short grows still shorter, and the pulse also more quick, and tense, as progress is made by this fell

destroyer.

Night sweats, another accompanying phenomenon, come on at length, producing their usual languor, and prostration. By this time, or even before, the expectorations which at first were quite thin, begin greatly to increase in consistence, becoming purulent streaked with blood, and finally true pus.

All the above named symptoms continue to increase in violence; emaciation ever keeping pace; hectic fever is at length fully developed. Swelling of the feet, and legs, with a diarrhea, and aphthae of the mouth, and fauces, following in quick succession, show to friends in language not to be mistaken, that dissolution is near at hand, and to patients, that their earthly sufferings are soon to have a final close.

Having thus run over a few, of the more general symptoms, we will now proceed to give some of those which are afforded by percussion, and auscultation. If we percuss a portion of the lungs the sound heard will be the same whether it be hepatized or completely filled with crude

tubercles; the sound being dull in both cases. And so likewise, if we auscultate such portion of lung, we shall hear no vesicular breathing in either case; but simply bronchial. Now it may be easily seen, that under such circumstances, disconnected with other considerations, percussion, and auscultation, would afford us no certain symptoms of phthisis. And yet by taking into account the history of the case, under examination, with other symptoms which may be present, we are thereby enabled with much greater certainty, and correctness, to make out a diagnosis.

A vomica in the lungs is shown by a gurgling sound which is heard on auscultation, caused by the passing of air through pus, or purulent matter collected in an open cavity in which there are open bronchi, leading directly into the trachea. When this peculiar sound is heard, we conclude we have a very clear symptom of Phthisis, which most commonly is true, yet there are exceptions, as there are other states of the lungs in which such a sound may be given out;

as for instance, when an abscess is formed as the result of common inflammation, or in a dilatation of the bronchi. It may be well to remark also, that one requires long, and careful practice to be sure he hears the proper gurgling sound.

If the vomica be empty, there is heard what is called cavernous respiration. This sound, or rather the sound coming from such a cavity, is not always the same; but varies according to the shape and size of the cavity: being when large a mere exaggeration of bronchial breathing, and when small a click only is heard, like the opening and shutting of a valve. Owing to size, and kind, a tubercular cavity may give on percussion, the metallic sound commonly heard in Pneumothorax; But we distinguish the one from the other by the position in which the sound is always heard, and the absence of excessive resonance in case it is situated in any part of the lungs; bearing in mind at the same time, that in Pneumothorax a very clear sound is heard, we shall have little difficulty in distinguishing between the two diseases.

The hearing of the patients voice, when an application of the stethoscope is made, as if coming from the chest, is a symptom of some value, and when attention was first called to it, was thought almost infallible; but was soon found not to answer such high expectations; for those who relied upon it as affording conclusive evidence of phthisis, often found themselves deceived, and sadly disappointed, since there are other states of the lungs, than that of a cavity, which will give a like sound, and also from the same locality, as when there is a solidification of the upper portion of one or both lungs, from any cause whatever, and the large bronchial tubes which traverse it, being at the same time pervious. Since then a portion of lung may be rendered dense, not only by crude tubercles, but by common inflammation, we are lead necessarily to conclude, that pictorilology is not much to be relied on when taken by itself, as proving the existence of consumption. And yet, when considered in connection with other symptoms, is of considerable value to the observing physician.

We have already simply enumerated most of the general symptoms of this disease; but will however mention a few of them again, and perhaps give others, that they may be dwelt upon more fully.

The expectoration of blood, is the first which we would call up. Under certain circumstances this is one on which dependance may be made, with some degree of certainty. Say, Watson, when remarking upon this symptom, "if a person spits blood, who has received no injury of the chest, in whom the uterine functions are healthy, and right, and who has no disease of the heart, the odds that there are tubercles in the lungs of that person are fearfully high." It often precedes the manifestation of any other symptoms, and in some cases, even for years.

We are by no means to conclude however, that in every case of consumption, blood will be expectorated, for it not unfrequently happens that there is not the least appearance of it, through the whole course of the disease. Of course we are not to consider the expectoration of simply mucus and blood, such as may occur in bronchitis or pneumonia, as what is

ment by the term, expectoration of blood. By careful observation, and long experience, it has been found that in a large proportion of cases, probably in nine out of ten, where this symptom makes its appearance, there is a fatal disease already commenced, and most usually it is phthisis.

Difficult breathing is commonly a symptom, but not one on which dependance is to be placed. For though in some cases the breathing will be somewhat quickened and shortened, and especially towards the termination of the disease, and yet not always appreciably so, since there is less blood in the system than in health, and therefore less oxygen is needed for its decarbonization.

Pain in the chest, or side, is another symptom; but as it does not differ materially, or rather has no peculiar characteristic mark by which it may be distinguished from pains arising from other causes, it is not of much value in diagnostics.

Hectic fever is generally an attendant; coming on usually in an advanced stage of the disease; yet making its appearance sometimes much earlier.

A chill is felt, more frequently towards night; through most of which, the feet and hands are felt hot and dry. Towards morning however a sweat commonly breaks out, which usually is partial, extending over a portion of the body only.

In most cases there is also a diarrhea, sometimes commencing early, but most commonly near a fatal termination of the disease. This is an unpleasant symptom, both to the patient, and physician, and also very hard to manage, frequently wasting the patient most rapidly notwithstanding all that can be done.

Although there are other symptoms which may attend this disease, and many of them striking, yet feeling that a sufficient number has already been given, we will forbear to give more.

We have said that the remote cause of this form of phthisis, was an inherited predisposition. All who are thus predisposed however, of course do not have the consumption. This may be accounted for in a measure, perhaps, by supposing the predisposition to be stronger in some cases than in others.

but more fully doubtless from the various predisposing and exciting causes to which individuals may expose themselves in after life.

We will therefore proceed to mention a few of such causes. And in doing so, we would say first, that anything which will weaken the powers of life, or debilitate the system, will without doubt, where a tubercular diathesis exists, predispose to consumption; since any ordinary or common cause of irritation in the lungs would be more likely to prove effectual, under such a state of things, in exciting consumption.

An inactive, and especially a studious life, most evidently may be numbered among such causes. Since such a course of life greatly tends to weaken the whole system, and particularly the lungs; from the bent posture which usually is taken by such persons while engaged in their employment, though not wholly arising from this; thus predisposing them in case of an exposure to an ordinary exciting cause, to tubercular phthisis; as is shown most fearfully at this day, when scarcely a week passes

but some loved and highly useful individual falls by this disease, and even within the circle of our own acquaintance.

Another, and as we believe, very frequent predisposing cause, is the living, sleeping, and labouring in very warm, unventilated, and often small rooms. Most people at this day use stoves, instead of fire-places, and thus are enabled with great facility to heat their rooms, and to keep them heated to a very high temperature, which is actually done, by a very large proportion of the community. This arises doubtless, not only from what we have now stated, but from the fact also, that on these days houses are built very tight. The utmost power of the most skilled workman, together with all the improvements of the age, are brought to bear, when a house is being built or rooms finished, upon this one point; the keeping out, during the cold season especially, every breath of air; forgetting that our very lives, as well as healths, depend upon good fresh air. Now in the days of our ancestors, say fifty or sixty years ago, houses were more roughly

built than in this age of invention. Many being constructed at that time, of logs merely, which would of course admit air, fresh and good, most freely. Hence death by consumption occurred but seldom in those days, when compared with the present. And furthermore, those who did die of this disease in that age, usually lived some fifteen or twenty years after they were attacked; but now they die more commonly in from six to twelve months. Thus showing most clearly, as we contend, the effects of the above stated predisposing cause; though doubtless there are other considerations which might be mentioned as concerned in bringing about such a change.

We shall not say much upon the exciting causes. Suffice to say, they are many, since anything which will bring on or cause an inflammation or irritation of the lungs may become an exciting cause.

As to the treatment of phthisis it may be said, that although so invariably unmanageable and fatal when once fully formed, yet something

may and should be done with a view to postpone its development, and to retard its progress also when developed. To meet the first named indication, every thing having a tendency to produce an irritation of the system, and particularly of the lungs, should be most carefully avoided. Persons being predisposed, should be particularly careful not to expose themselves in very severe and damp weather, and to always clothe themselves sufficiently warm, thus keeping up a healthy and moist state of the skin, which is accomplished most effectually, especially in our variable climate by wearing flannel next to the skin, both summer and winter. They should also pay particular attention to their diet, that it be not too stimulating. A vegetable and farinaceous diet is considered the best. To live upon milk is recommended by some, which unquestionably would be very well in some cases. Moderate and daily exercise in the open air should not be omitted; and riding on horse-back would be a very good mode of accomplishing such an object. There is a great tendency to a morbid irritation of the

system, and it is thought, nothing is so good, to meet this symptom, as digitalis; owing it is contraindicated, to its contrall over the action of the heart and arteries.

In the incipient stage of the disease, external counter irritation should never be omitted. This may be accomplished either by blisters, setons, or issues. Small doses of tartar-emetie are found very useful in this stage of the disease, in promoting and keeping up, as it well, a moist state of the surface. Says Eberle, speaking upon this subject, "unquestionably the most efficient of all measures for counteracting the tendency to phthisis, or arresting its development or progress, is a removal to, and a residence in a mild, genial, uniform and salubrious climate" Now in making such a statement he is doubtless correct; but the question is, where is such a climate to be found. Many places have been pointed out from time to time, as affording such a climate; yet when tried, have failed; most of them, to answer to such a

description. It is now believed by some, that one as good, and perhaps better than any other, may be found in some portion of the interior of Florida.

When the disease has become fully established, we can no longer expect permanently to arrest its progress by any remedial agent, or measures, within our knowledge. We should therefore apply remedies to palliate as far as possible the most painful symptoms. To relieve the most irritating and thus enable the patient to get sufficient rest, opium in some of its forms, is much relied on, and is a good article for that object, though doubtless some other of the narcotics might be found to answer as well, and perhaps even better, especially in some cases.

For the night sweats which occur more particularly in the advanced stage of the disease, the acetate of lead is thought to be one of the best remedies.

To palliate the cough, an expectorant of some kind will be found highly useful, and should never be omitted.

Elisha V. Peck



XI.

Dissertation
on
Percussion and Auscultation,
as applied to Pneumonia.

By
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Candidate for a License.

On Percussion And Auscultation as applied To Pneumonia

The discovery of Percussion
connected with Auscultation and its subsidiary physical
Signs, have been two the greatest boons ever conferred upon
the Medical Science, by the genius of Man,

It is on the discovery explanation and connection of those
Signs with structural changes, afforded by Auscultation and
Percussion, that Laennec, and Stenhal's imperishable
fame is founded. "The former has converted the ear into
an eye, that the hidden recesses of visceral diseases may be
laid open to our view, While the latter has demon-
strated to us that the same sound which is evinced in health
by striking upon the chest, does not exist where the lung
is obstructed, or the cavity of the chest filled with fluid,
"The two phenomena conjoined. affords a new help in the
detection prevention and cure of the most widely spread
diseases that afflict mankind,

owing to the presence of air which constantly fills the³ lungs, and consequently, a great portion of the cavity of the thorax, a clear sound ought to be yielded over the whole extent of the chest. More particularly its anterior part when lightly struck, a fact well known to the ancients as well as to the common people of the present day, who frequently strike their chest, and congratulate themselves upon their soundness, as shown from their producing a distinct hollow sound.

Hence it would appear from an acquaintance of this fact, viz. that the same sound cannot exist in health with that of disease, that it would have led to the discovery of this science, ere so many ages had passed away. Although this reflection appeared never to have occurred, until it occurred to Hambroger in the middle of the last century. And who after seven years silent research, amid laborious and disgusting investigations as he informs us, gave his discovery to the world in a small pamphlet. The only attention paid to his valuable discovery was a slight notice from Van Swieten and Stoll, who however soon neglected it, and he died unconscious of the celebrity his discovery was destined to obtain. And not until after a period

of thirty years was it rescued from the oblivion into which it had fallen, while on the other hand time has shown that the principles of Laennec's Mode of diagnosis were not the idle fancy of an enthusiast, which was remembered only to be ridiculed, but that the genius of rational induction was the only power under whose guidance he pressed on to the fields of his discoveries.

The usual Mode of Percussing is to allow the Patient either to sit or stand, with a thin dress upon the chest. While the fingers of the operator should be united in one line, the thumb used to maintain them in close apposition by being placed at the junction of the second or third phalanges of the index, the ends and not the face or pulpy portion of the fingers, should be used to strike with, at the same time observing that in case the Muscles covering the ribs are thick and flabby we should endeavor to procure their tension by stretching and compressing the integuments with the fingers of the left hand. and strike upon them with the fingers of the right hand. When a slight difference of sound is only produced by Percussing both sides of the chest successively, We should remove to the other side of the Patient, when

an entirely different sound will be obtained, A precaution
never to be omitted in doubtful cases, as the sound most ~~sound~~ ^{sound}
in the first trial, will now yield a sound inferior to the
other,

I will not occupy time
by describing the character of the sounds derived from
different parts of the chest, Merely mention the character
of the sound derived from the subclavian region, and
dismiss this part of the subject, This region includes
only that part of the chest covered by the clavicle,
When Percussion is performed upon the middle or distal
extremity of this bone, a very clear sound is produced,
its humeral extremity on the contrary yields a rather
dull sound, An acquaintance with the healthy and
morbid sounds of the chest in this region, is of very
great importance, as from it the first indication of tuber-
cles in the lungs are derived,

I will now direct my
remarks to Auscultation which admits of a wider scope
for the attention and practicable observation of the
Physician, as we are aware that Percussion is but
the handmaid of Auscultation, and when used alone

no exact and certain results can be obtained compared to the infallible accuracy with which Auscultation reveals the condition of the contents of the chest in disease,

Mediæ Auscultation then is now the adopted Means by which we are enabled to hear and distinguish the various Sounds produced by the vibrations of the viscera of the chest, either in health & disease. And which by a comparison of the two, we are at once in the possession of a knowledge of the true state and condition of the vital Organs.

The vesicular Murmur is that kind of vibration produced by the penetration of air into a multitude of small cells dilated to receive it, sometimes called Pulmonic Respiratory Murmur, and is recognized by the ear as being soft and silky. The sounds from the passage of air in the Larynx, the Trachea and the Bronchial branches, are different in each locality, being more rough and deprived of that vibration which is produced by the dilatation of the air cells,

Though from a fear of lengthening this, beyond the limits that day time will allow, it will pass over the various Auscultatory Phenomena of each individual modification of sound, and briefly notice the alterations occurring in the Murmurs

in the three stages of Pneumonia, that being the ^{my subject} basis of:
In the first stage of inflammation of the air cells, the lung
undergoes an accumulation of, and consequent exhalation of
blood on the internal surface of the air cells,
Hence the Lung is more solid and heavier than before,
Though it still crackles under our fingers after death, a
circumstance that leads us to expect that there is respiration
in the parts during life, and that is the case, as it is
distinctly heard, and the same conclusion would lead us
to infer that, as air is admitted, we can also, on descending
hear a hollow sound, and such also is the fact,
but the respiration heard in the first stage of inflammation,
is accompanied from the commencement by a crackling sound
a crepitous rhonchi, instead of the ordinary murmur of
respiration, the Vesicular respiration, and is in compar-
ison heard to that sound produced by rubbing slowly and firmly
a lock of hair near one ear, as it conveys the idea of
numerous and minute and almost dry bubbles, and the sound
is heard with more facility the nearer the inflamed part
is to the surface it is a stage characterized by an accumulation
of blood, and rapidly advances on to the second stage
as the inflammation becomes more intense, which stage

is denominated 'Hepatization, from the Lung being so firm as to resemble Liver, though the term is not so appropriate as Solidification of the Lung, a Lung that is impervious to the air, one that will not crackle under our fingers after death, one essential circumstance to a permeable Lung.

The symptoms of this stage are readily anticipated, as a Lung that has become solid, of course, whatever that spot, no sound can be produced by percussing that part of the chest, other than that obtained by striking over the region of the Liver. And as a Lung thus impervious to the air, as a matter of course cannot yield the usual respiratory murmur, even in the slightest degree, and there being no murmur heard, there is no crepitant respiration at all in the part, and hence no crepitant rhonchi.

Though from Solids being better conductors of Sounds, we have Bronchial Respiration instead of the vesicular, and we hear the voice of the Sibilant, if we cause him to speak in the small bronchial branches, and which is greatly increased if the solidified part happen to be near a large bronchial tube, Called Bronchopony,

As inflammation of the Lung has a tendency to suppurate if third stage occurs at an advanced period,

A peculiarity in suppuration of the Lung is that the Pus is diffused, and not collected into an abscess, after the second stage, when the third begins, the Lung is as solid as before, and hence no hollow sound is heard on Percussing, neither is there any Respiratory Murmur, but a loud Mucous Rattle, a rattle which we may ever recognize by remembering the sound occasioned by air passing through soap suds. The Mucous Rattle is heard in the Bronchia either from some of the Pus going into them or from a secretion from their own Membranes.

An excavation may be formed however in the Lung and giving rise to a peculiar symptomatic sound of Voice Pectusology, which is that Phenomenon produced by a cavity in the Lung in the first place, in the second the bronchial tube enters this cavity, and as air enters, the same state of parts exist there as in the Larynx, if we place the Stethoscope over the Larynx we have the voice travelling the tube as though the mouth were at the other end, and just the same occurrence takes place when the Stethoscope is applied over a cavity in the Lung;

Pneumonia is frequently fatal

when it has not advanced beyond the first stage, but should the disease be stopped by art, if the inflammation yield, of course the Lung goes through the same stages as before. Though in an inverse manner, the third stage comes to the second, and the second to the first, and it is found also that the signs unduly noticed, goes through the same inverted course,

By the auscultatory phenomena heard in the second stage dropped, and those ~~which~~ which occurred in the first stage are heard again, Suppose the disease has only gone into the first stage, on Percussion we hear the hollow sound as in health, on employing the stethoscope, we hear the crepitous rattle and even a crackling, but if the Patient is being cured, the crepitous rattle declines, it is less distinguished each successive day, and in its stead we hear the respiratory murmur more and more distinct,

Suppose the second stage has been reached and the Patient is recovering, the want of a hollow sound on Percussing gives way, and we hear by degrees a little hollowness of sound which also increases gradually until the sound derived is as hollow as in health, The crepitous respiration

I mentioned had ceased from the lung becoming solid,
but now may be heard a little crepitous rattle, which increasing
as it does each day, becomes distinct as in the first stage,
it passes through that. The crepitous rattle diminishes,
and the natural vesicular murmur becomes more and more
distinct.

The third stage is characterized also by a want of hollownes
of sound, but there was a murmur heard from the
air occupying the bronchial tubes. This however
declines supposing the patient to be getting well, and
we hear a crepitous rattle from the air cells being freed
from their fluid contents, and air again penetrating
them. The thorax is again hollow to the stroke,
and finally the crepitous rattle gradually declines, and
the healthy murmur is established.

In speaking more fully of the anatomical characters of the lungs,
~~the crepitous rattle~~ it may perhaps be as well to notice
how far these auscultatory phenomena correspond with these
~~anatomical characters~~.

In the first stage of pneumonia the substance of the lung
presents an increase of weight and density, it is infiltrated with
a frothy, sanguineous serosity in considerable quantity. It
still crepitates on pressure, its alveolar texture can be recogni-

22 ized, The external surface is a deep violet, the interior is more
or less deeply red, In the second stage or that of "Hepatic
ation" stage, it no longer cretates on pressure. It presents the
heaviness, appearance and density of the liver, its texture seems
granular when torn, its external surface is not so much
of a violet colour as the preceding degree, its interior is red
and presents some white spots, caused by the pulmonary cells and
vessels, there are occasionally mixed with black spots, similar
to those observed on the surface of granite, The sanguineous
serosity with which it is infiltrated is diminished in quantity, and
does not trickle out when a section is made.

In the third stage or that of "Hepatication grey,"
the interior of the lung becomes of a pale yellow tinge,
its granular aspect becomes even still more manifest, a
purulent fluid issues from it on incision, which may
be collected by the scalpel, Lastly the pus infiltrated
into the substance of the lung may unite in some points
and then gradually increase so as to present the appearance
of an abscess. The vessels of which exhibit no trace of false
membranes, on the contrary. They are softened and broken
down, so that not a trace of their original structure remains

Thus it may be seen what relation the Morbid Anatomy of the Lung, bears to the Physical Signs which the lung evinces aided by Auscultation and Percussion.

In the first stage, the condition of the Lung noticed Anatomically, gives sufficient cause to the crepitation which is heard, as it arises from the facile passage of air through the spongy porous serosity already noticed.

In the second stage, it is also evident from the Morbid State of the Lung, that there can be neither Vesicular nor Crepitous respiration in life.

And in the third stage, the pathognomonic signs acquired by the ear, sufficiently prove the Lung to be in the precise state, in which it is found after death.

In the second stage as the inflammation advances, the fluid which occupied the air cells becomes more thick and viscid, it can no longer be expelled from the vesicles in which it is formed. It accumulates, obstructs, and distends them, and so gives rise to those granulations, which give to the Lung its hepatic appearance in the second degree of Pneumonia, at a later period, it is not mucus or blood that is poured out, it is Pus, which in its turn fills the air cells, and so constitute the

grey granulations which characterize this last stage of
depolization arise, hence the suppression of the crepant sound.
If a portion of Lung in this state be pressed, we see
the pus exuding in the form of drops, each seeming to come
from the vesicle in which it had been contained, if
the distention of the cells be general and carried to a
great extent, they burst, their contents become blended
and so the granular appearance is lost.

The walls of the vesicles
become soft and friable, just as all tissues do when
inflamed, Hence the remarkable softening of the
substance of the Lung in Pneumonia

In the third stage a purulent effusion takes place in
the affected part of the Lung, the Mucous of the chest become
more retarded, weak and difficult, Symptoms of general
debility supervene, the Mucous rattle is heard, at first
in some points, then in the whole of the affected part.

This degenerating into a gurgling sound, indicating that
the pus is collected into ~~in~~ mass, & cavity, from which
it exudes by the neighbouring bronchi, and so, a perfect
pectoriloquy is established by means of this communication
between the cavity and the air-tubes.

Thus I have endeavored to substantiate the importance of 15-
Auscultation and Percussion, by observing the Pathognomonic
Signs that occur in the three stages of Pneumonia
auscultation and Percussion as it is applied to Pneumonia, being
the subject upon which I am engaged

The discovery is a beautiful illustration of Man's genius in
striving to gain the limit of skill, from which he may retard
the too rapid approach of the fell destroyer in his Majesty
of power, and also illustrates the practice of this discovery
to be something more than a philosophical observation

It is an intellectual
gratification, and doubt indeed must be those
who will not employ their ears for the purpose of
knowing as indeed they may know, the absolute condition
of the Thoracic viscera, as assuredly would they were
~~they were~~ it possible for them to employ their mailed
eyes, and vain is it for them to assert that the
phenomena of disease is known to them when they
obstinately refuse to avail themselves of the means given
them by nature to detect disease,

and vain is it for them to avow that they can form
an accurate diagnosis in all cases, for it is a fact

That these same persons are continually lamenting that the Medical sciences are so uncertain, and that they are continually mistaking diseases of the heart for diseases of the lungs, and diseases of the lungs for diseases of the heart.

And if Pneumonia suddenly attacks during a chronic affection of the chest, they at once ascribe the symptoms to effusion to pleuritis, to dropsy of the chest, or some other frightful occurrence.

While on the other hand, every

well informed person admits that the discovery of Laennec and Breibinger has effected for Medicine what Celsus and Desault have already done for surgery.

For if a catheter, introduced into the bladder, gives an assurance of the existence of a foreign body in that viscus, Percussion is no less decisive test

of the existence of a preternatural expansion in that part of the lung in which it is perceived.

And the suppression of the natural sound of the chest on

percussion less decisive evidence of the existence of fluid or hyperinflation in that part over which it is noticed.

Levi Reck

~~XII~~,

Dissertation
on
Intermittent Fever.

By
Henry Clinton Porter,
of Towanda, Penn.,
Candidate for the Degree of Doctor in Medicine.



Intermittent Fever.

Our knowledge of the existence of fever is intuitive, therefore, its definition is unnecessary even if it could be given.

The symptoms of different fevers only require a description: that they may be known when called by their particular names.

As the causes of fevers are differently described in the description of different fevers will be different and as most agree in their description of intermittent fever I will try to describe that form, as it presents itself to my imagination from reading authors as I have never seen but two cases, which were in fact nothing but imitations of the genuine agues.

Cause. Intermittent fever generally has been ascribed as the consequence of exposure to Malaria or Miasm generated in marshy places. but intermittent fever has existed in places distant from marshes and among persons who have never visited any of its residences, yet not sufficiently to prove - that Malaria is not frequently a direct cause. What is Malaria? This question has been variously answered but not satisfactorily because the term when defined and traced down in its definitions amounts to a visible nothing and the only way I can answer it, is, by saying it is that something which yet seems to be nothing that causes intermittent fever; and
omit

as it is a cause of dispute, why not a cause of ague?

It would be indirectly if disputes were produced agues and I believe they do, at least the hot stage. I shall call them all those influences that help produce intermittent fever by the name of Malaria. The cause of intermittent has been ascribed to the presence of insects similar to the Acari in itch which carry different sized bags or pouches containing a virus, that those with little bags produce intermittent; those with greater bags remittent; and those with the greatest bags the plague. Intestinal worms, the suppression of habitual discharges and fright have been reported as causes - also by the Indians I was poisoned by a snake. By another person whose opinion in disease convinced all of its correctness on account of his superior observation and ability to detect and analyze symptoms. Alternations of temperature, excessive heat and heavy dews as well as mentioned as causes and also that the Chinese intermittent fever moves in a certain cycle - If these alternations are the causes of intermittent fever, why should the margins of pools, shores of rivers and marshes be the locality of ague in preference to the joining country as the dews and heat fall equally upon them.

At times ague is prevalent here. Is it produced by
atmospherical changes? If it is, Why is it not more commonly
produced here? Because it is said it only comes in its
cycle. Then if it possesses a comet-like locality, ague
can not be caused by the common changes but by those
special alternations of temperature which accompany this
cycle of intermittent fever, and if special alternations
why not give a special name to these changes and call
them malaria.

Men encamped to the leeward of
a marsh have the intermittent fever, those to the windward
do not. If there was not something more than the mere
changes of temperature, why should those to the leeward only
have ague and those to the windward be exempt?

Civilization has an effect to check the development of
intermittent fever but I believe the heat and dew remain
the same and ought according to the above theory to produce
ague the same as before. The peculiar residence of
agues proves there must be some peculiar property in that
locality which may be called Malaria, Miasm or anything
else suited to the imagination of the writer. No one
doubts the contagiousness of Small Pox through the
medium of the air, but if that air was "bottled up".

sent to the Chemist and analyzed, it would not differ from the analysis of common air, Hence because the peculiar virus can not be detected by chemical analysis it does not prove the non-existence of noxious qualities.

Just in the same manner because the air in malarious districts when analyzed does not show some peculiar property, it does not prove its nonexistence. It only proves that Chemistry has been unable to find a test to detect such properties as it also is unable to discover by analysis the presence of odors in the air.

It does not require the Chemist to detect the presence of this property in the atmosphere. Any anti-malaria man can do it if he will use himself as a test and he will be sure to register upon his own person the invisible malaria, visibly.

The susceptibility of persons to this disease is very various. It has been known to attack persons debilitated by accident or previously so in preference to the robust; it also attacks persons of middle age more than at the extremes of life probably from their engagement in more active business and consequently exposed more to the influence of the malaria.

Strangers are more subject to intermittent than those residing in a que districts and persons having had an attack are not so liable to have it again as those who have not. Residents of malarious places are described as "puny, ballow and sickly, feeble in body, spiritless in mind, as having yellow faces, swelled bellies and wasted limbs, as being melancholy, phlegmatic and short lived". The Negro is the only exception, using the language of Doct Fergusson "To him malarious miasmata are in fact no poison. The warm, moist low and humid situations, where these pernicious exhalations are generated and concentrated, prove to him congenial. He delights in them. For there he enjoys life and health, as much as his feelings are abhorrent to the currents of wind that sweep the mountain tops, where alone the whites find security against endemic fevers". There are certain laws concerning malaria which have an important bearing upon those living within their jurisdiction, viz.

First. Malaria are evolved with the vapor during the middle or hot part of the day, and at night fall upon the ground condensed as to their noxiousness and

and in the morning they remain near the ground until the heat shall cause them again to rise mingled in vapor.

Second. Malaria are carried along by the winds and thus are able to fix their habitation in various places and to dose the defenceless inhabitants without a knowledge of their invisible approach. The extent to which they may be carried is unknown but some authors assert they have retained their virulence three miles.

Third. They lose their activity by being diluted largely in the atmosphere and thus afford a fact as proof against the Homeopathic doctrine of dilution. Whether the mere dilution destroys their noxious properties or whether they have an affinity for other substances and by their decomposition form inert compounds are questions too far in advance of my knowledge of Chemistry to answer.

Many circumstances could be quoted to prove that the Father of Intermittent fever uses the Winds for his Chariot, but the following will be sufficient. Thirty Ladies and gentlemen upon a sailing excursion, breathing the air coming directly to them in full blast from the neighboring marshes, were immediately after attacked

with Tertian Ague, except one who only from the whole number escaped,

Fourth. When malarial are blown over surfaces of water their noxious properties are destroyed.

Fifth. Malarial are attracted and adhere to the foliage of forest trees and thus afford security to the inhabitants who live near. The trees forming such a shield are held sacred and would not be permitted to be cut down sooner than a door would be suffered to be opened into towns for the entrance of Death.

Sixth. Cultivation and draining have been considered as preventives to the generation of malarial, because some places which were very noxious before, have lost that quality and because places upon a cessation of cultivation have resumed their virulence.

The more the subject of malarial is investigated the more wonderful does it seem and as the doctrine of putrefaction is now considered unnecessary for the production of malarial, so does it seem that marshes are not the only places necessary for their generation, Doct Ferguson gives many instances showing

the absence of intercurrent fever in, is a destitute
of vegetation - as large sandy plains - that when they
are drenched with rains and receive a great heat
from the Sun, they are very noxious. If this is
true that the Ancient Elements, Earth, Air, Fire
and Water are alone sufficient to generate malaria
it seems as if young doctors might at any time manufac-
ture with the above ingredients any desired amount
of business. All that would be required to produce
intermittent fever, could be done by taking advantage
of a strong wind to the windward of a town near a
sand bank and placing the sand in large shallow
iron pans - first showering the whole with water then
building a fire underneath, a rapid generation of
malaria would follow, and if the distance was not
great nor woods intervening nor water to pass over -
the inhabitants would all be shaking with cold in the
midst of summer. It is said by some,
Malaria have no choice of soil for their habitation.
They are generated in sandy, clayey or rocky lands
and as the susceptibility of persons to this disease is
very different, it seems as if the base of the compound

uniting with malaria to form intermittent fever
might be found in man. Debility has been
considered as a predisposing cause and malaria
an exciting cause and that a person would never
have ague unless exposed to debility. That the
exciting cause sometimes acts first and waits patiently
until some unlucky accident shall ^{occasion} debility sufficient
to set the chills agoing. It has been said
the more concentrated the violence the less would
be manifest the intermissions and hence near the
border of a marsh, the fever would assume the continued
form: at greater distance the remittent and still
farther the intermittent and this has been proved by
men encamped at different heights on mountains at
the foot of which lay a marsh, by those, at the bottom
suffering with continued with more marked remissions
according to the ascent, until at the top it became
intermittent.

Cause of intermission. Willis described the intermissions
as arising from a periodic fermentation of the blood.

Reil says the intermission is owing to some "general
law of the universe" as the alternation of light and

darkness, the ebbing and flowing of the tides, the regular change of the seasons, the regular and involuntary calls of Nature as Hunger, Thirst, Sleep &c. Baillie's explanation is - the alternate position of man from the recumbent to the erect every twenty four hours and offers as proof the non appearance of the disease in animals - Roche says they are periodic because the causes are periodic - that the parts of the season in which they most prevail are more changeable in temperature, that through a part of the day the effects of malaria are feeble, that at another part they are energetic and virulent, and goes on to prove the return to the influence of habit. The effects of habit in sustaining periodical action is shown in the case of a person who took a cold bath at midnight for seven successive nights in the month of October, The first time remaining in the water fifteen minutes - the second half an hour and so on until he was able to stay in the water an hour, After each bath he went directly to bed and experienced much heat which was followed by copious perspiration during which he fell asleep, After the seventh night there was no more bathing but the

regular phenomena of an ague appeared in the next six successive nights at the same hour.

4 Cullen considered a "diurnal revolution" in man to be the cause of the periodicity. How are we to know which of the many hypotheses is correct when the oldest logicians of medicine disagree? Our conclusion must be that the present age of medicine is too young to explain every fact and that the phenomena of intermittents will be under the necessity to remain some time longer a puzzle to physicians.

Symptoms. By whatever cause intermittent fever is produced, its symptoms are very regular and have been universally divided into the cold, hot and sweating stages. They are described as three separate parts although the whole is one continued scene of action.

Before a person has an attack of ague he feels unwell as if he had better put off his present business until some time when he is better. His uneasy sensations increase and he feels lazy, headless and is inclined to sigh, yawn and stretch himself.

These symptoms are called primordially as indicating a speedy attack. He soon experiences a sensation of weakness

and distends about his epigastrium - He feels chilly particularly in the back along the course of the spine and from thence radiating over the trunk and extremities which has been compared to the feeling of cold water trickling down the back. The blood leaves the capillaries, he looks pale, his features become shrivelled dry and rough and his whole surface is diminished and is thought to resemble the skin of a goose. He now feels very cold, he shivers and trembles, his teeth chatter and in some instances it has been reported "loose teeth were shaken out and fractures of the jaw produced."

The bed trembles on which he lies so as to shake the room, his knees knock together, his hair bristles from the constriction of his scalp - his features, face, lips, ears, nose and hands turn blue, his respiration now is difficult and hurried, his pulse is small, quick and feeble, he has pains in his back and loins, his urine is scanty and pale. His tongue is white and dry, but sometimes moist. After the continuance of this state of distress for some time, the chills are alternated with flushes of heat which commence in the face and neck; gradually the chills cease entirely and the whole body becomes hot; the skin is relaxed and smooth

but becomes very dry, hot, and pungent, there is great thirst, the bulk of the body is restored, his face is red and turgid, his respiration is relaxed only for a short time and becomes again hurried and oppressed, his pulse is frequent, full and hard, the temples throb, the head aches, the urine is scanty and high colored, the tongue is white and dry, the patient turns over often, throws his arms about, is very uneasy and restless.

These symptoms are soon relieved by the interposition, the skin of the face becomes moist and a moisture gradually extends over the entire body until a profuse perspiration is produced so that his clothes are completely drenched, the thirst ceases, the tongue is moist, his pains are gone, his breathing and pulse are natural, the urine is plentiful and deposits a lactitious sediment, his perspiration finally stops and the return to all appearances is made, there remains some slight languor and debility.

These symptoms generally attend and sometimes there are local affections also, treated with the fever then the symptoms of the local affection will be added to those now described and will disappear, finally the symptoms of the internal affection will add gradually.

omit ———
to the danger of the patient. The most frequent of these
local complications is the gastric, in which there is inflam-
mation of the mucous membrane of the stomach. The
symptoms peculiar to this, will be intense pain in the
epigastrium, great gastric disturbance as nausea and vomiting,
the countenance pale, the pulse small and quick, the breathing
hurried, the skin dry and hot, the tongue bright red or brown,
the thirst great, the urine scanty and high colored
with a yellow tinge and great prostration of strength.

When complicated with cerebral disease there will
be intense pain of the frontal region, incapability to bear
light or noise, great difficulty in directing the thoughts,
the stupor & coma, eyes fixed with half open lids, some-
times convulsions and all the symptoms of inflammation of the
brain. Complications with inflammations of the lungs,
affections of the heart, liver, spleen &c, have been described
by some authors. Intermittents have been considered
salutary and prescribed as a medicine to cure other affections.
People have visited aguish districts on that account and
if they did not succeed have loudly complained of their
inability to catch an ague. Doct Sims was one of this
number. The three stages of ague are called

the paroxysm: the time elapsing from one paroxysm to another is the intermission and the time including both paroxysm and intermission is the interval. The paroxysms differ in duration and in the cold and hot stages. The cold stage varies from a minute to four hours and the hot from four to twelve. When a paroxysm occurs every day it is called a Quotidian, every other day or forty eight hours a Tertian, every third day or seventy two hours a Quartan and so on as high as Octavans, and Plinc mentions a person who had an Annual occurring always on his birth day.

The name of a Quotidian takes place in the morning, a Tertian at noon and a Quartan in the evening.

These rules are generally followed very promptly unless the disease is about to leave when the paroxysm comes later and is said to postpone, when earlier to anticipate.

Double and triple tertians and quartans are mentioned among the various ways in which an intermittent appears and there would be almost an inexhaustible collection of names if any one would take the trouble to collect them from the many imaginary authors. The duration of a paroxysm is different in the different species. In a quotidian it

is ten or twelve hours; in a tertian six or eight; in a quartan four or six; The paroxysm may be deprived of either of its stages, it may occur with a cold stage only, or the cold and sweating without the hot or the sweating without the other two: this kind of paroxysm occurs generally at the termination of fevers or it may occur at other times and is called *ad Remittentem*. By the name of *Remittent Agues*, those affections which occur chiefly periodically and yield to the same remedies and make their appearance with a chill and their departure with a crisis are styled *masked Agues*. There are forms in which the periods of a paroxysm follow no general rule, these are called *Erratic Agues*. Intermittents have been divided into *Vernal* and *Autumnal*; the quotidian type prevails mostly in the spring; the quartan in autumn and the tertian in spring and autumn and consequently is the most prevalent.

Post Mortem. The morbid appearances of those dying from intermitting fever are inflammation of the serous membrane and substance of the brain - disease of the Liver, Spleen, Stomach &c. The cortical part of the brain when cut is more red than usual with spots of blood.

and often softened. The arachnoid coat is thickened and injected with numerous vessels and there is an effusion of serum within the convolutions and sometimes matter is found in the ventricles.

The Liver has been found very much enlarged.

Willis found it appearing as if composed of black blood slightly coagulated and of cellular bands which alone offered resistance to the pressure of the finger.

The Hepatic ducts and Gall Bladder have been found thickened and distended with dark colored viscid bile.

The Spleen is the organ most frequently seen presenting marks of inflammation: its interior broken down and consisting of a black pulpy mass, at other times only in a state of engorgement and has even been known to weigh ten pounds. The Pancreas is often hardened & swelling sometimes. The Lungs are often engorged presenting a dark color. The Stomach has shown marks of inflammation more frequently near the pylorus and the intestines have presented an inflammatory appearance but rarely ulcerated.

Treatment. The treatment of intermittents has been a subject of contention for various authors; some supposing it malarial, that it ought to run its course; others that it

should run only a certain length of time before any remedial measures were adopted; but now it is or ought to be considered necessary and important to check it as soon as possible. For which purpose the treatment has been divided into four parts adapted to the three stages and intermissions.

The treatment of the cold stage consists in the use of diluent drinks, cordials, external warmth, Opium in use and bleeding.

Warm diluent drinks made cordial for those weak and exhausted have often proved useful. External warmth applied by means of warm bath, heated air, friction with liniments or hot bricks to the feet and cloths to the epigastrium are useful in relieving the feelings of cold and have frequently cut short the cold stage. Opium is recommended in tincture thirty drops at its first approach and if some warmth did not follow in ten or fifteen minutes, from twelve to twenty more; the effects of which are exhilarating altering the pulse from quick and small to full and large and affording great comfort to the patient. Emetics are given just before the

approach of the cold stage to shorten it, but are now not generally used. Bleeding is highly recommended by Doct Mackintosh who offers his own very great experience and that of several others to prove it not only shortens the cold stage but stops the disease. The blood is to be drawn until the feelings of the patient are relieved which has been done by the abstraction of an ounce and a half rarely requiring twenty or a repetition.

Another curious mode of treatment is the application of tourniquets to two of the opposite extremities so as to obstruct the circulation and it is said that if applied before the cold stage, the accession of the paroxysm will be prevented, if in the cold stage the hot stage will follow very soon according to Doct Haller in three minutes.

The remedies for the Hot stage are opium, blood letting, sponging the surface with cold water, giving acidulous drinks to diminish the temperature of the body &c.

During the sweating stage the perspiration must be promoted and permitted to go on until all the unuseful

sensations are relieved, then it can be checked by drying with towels and changing the linen.

The remedies for the intermission are Bleeding, Emetics and purgatives for general treatment and the specific, are the Peruvian Barks, Quinine, Arsenic, Ferrocyanuret of Iron, Salicine, Poplar Willow and Oak Barks, Web of the Black Spider, Charcoal, Peppermint, Chamomile, Sulphates of Zinc Iron and Copper, Muricite of Ammonia, Calomel, Tartar Emetic ointment, Many other Tonics, Stimulants, Anesthetics and Cassinatives.

The most important and successful of all is the Quinine; it is given in this climate in doses of from two to four grains every four or six hours during the intermission or one grain every hour.

In hot climates it is said to require a larger dose as twelve, twenty and thirty grains at a time.

Sometimes it has no effect on the disease until a purgative is given and Doct Watson was in the habit of giving a dose of Calomel and Rhubarb ^{or} before the Quinine.

When the Quinine fails, Fowler's Solution ranking next

in importance is used successfully in doses from two to twenty drops three times a day.

A combination of the two is a good form for administration, Quinine is more adapted to Atonic and Arsenic to tonic conditions, hence the Arsenic ought to precede the ^{quinine} bark as preparatory in an entonic state of the system, or evacuant ought to precede the use of the Quinine.

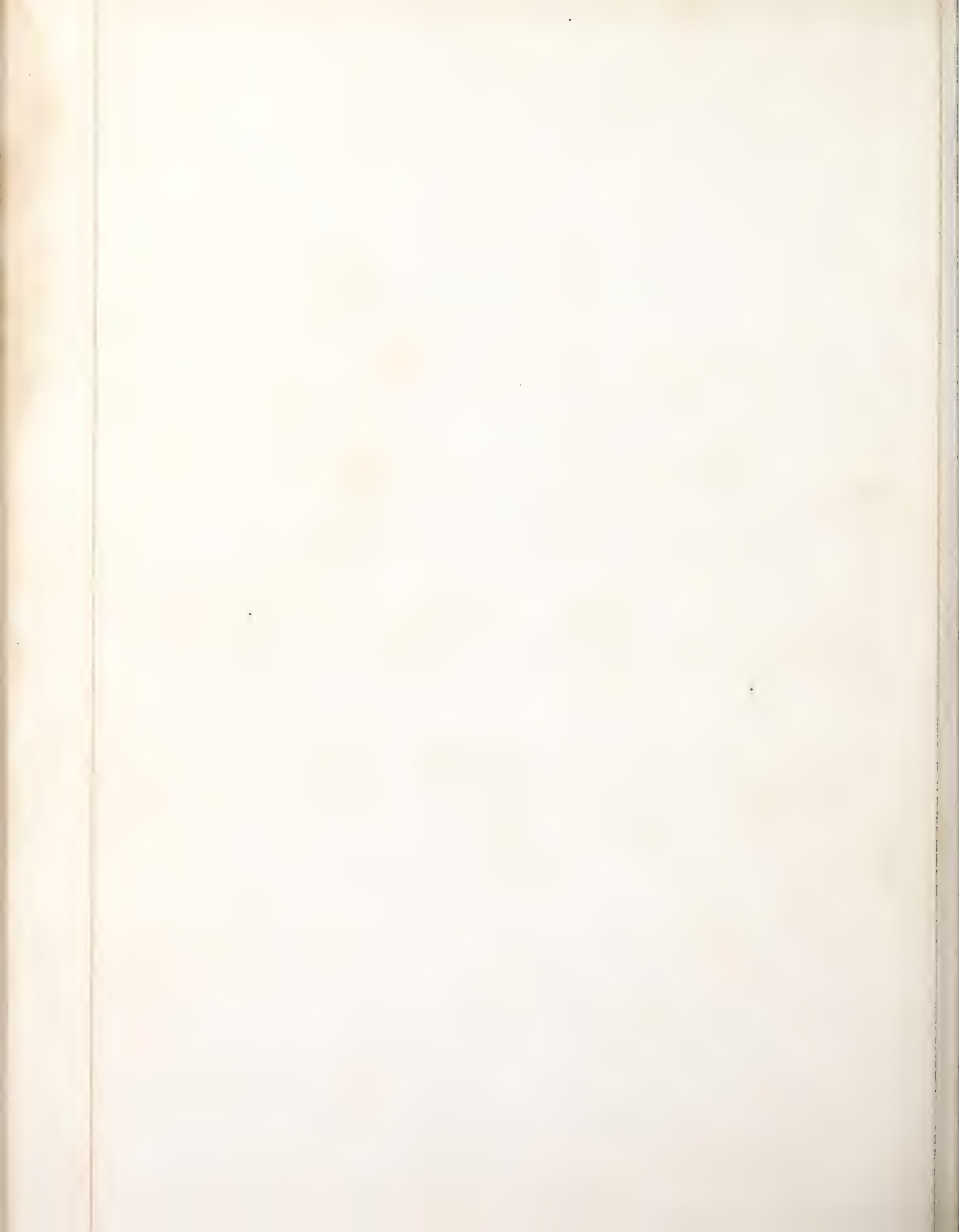
Opium given an hour before the paroxysm to the patient in bed in tincture twenty to forty drops with ginger tea and warmth to the feet will often prevent the accession of the paroxysm. Ferrocyanist of iron is used in doses of six grains every three hours.

Charcoal is said to cure in doses from ten to twenty grains every six hours. Pipazine in six grain doses —

Sulphates of Zinc, Iron and Copper in three to ten gram doses. — Ague has been cured by the influence of strong mental emotions as sudden and great joy, anger, terror &c. or by strong impressions on the imagination, producing feelings of disgust, horror or eager expectation.

Wm. C. Porter





XIII,

Dissertation
on
Tubercle.

By
Munson Abijah Shepard,
of Danbury,
Candidate for a License.



Tubercles

The term tubercle is employed to designate a peculiar morbid product occurring in various organs, in the form of a small round body; usually described as passing through successive stages; on the first appearance of tubercular matter in any of the organs it is said ~~to~~ consist of a firm grey somewhat transparent substance; with age becoming opaque and of a dull yellow color and caseous consistence; these characters are said to represent crude tubercle; at a subsequent but indefinite period losing its consistence and becoming liquid it is compared to cream this is termed the softening stage.

The tubercular constitution when hereditary is so strongly marked that it is not liable to be mistaken; it is manifested by a peculiar expression of the countenance, by the form and



development of the body: in early
childhood the countenance has a pale
pasty appearance the cheeks generally
full and the alae nasi large
in early childhood the form of the
body is little remarkable, though usually
large and wanting the firmness of adults;
as the child increases in age the different
the different parts of the body are disproportioned
the head is often large the thorax small,
the abdomen tumid, and the limbs
unshapely, being either large and clumsy
or disproportionably slender ~~slender~~ with
large joints; The function most ^{evidently} ~~absolutely~~
disordered is the digestive; and indeed
this marks the first deviation from health;
irregularity of the bowels, being usually
torpid sometimes the torpor alternating
with diarrhoea, the evacuations are not
of the natural appearance; the urinary
excretions also often deviate from the
healthy standard being often turbid,



especially when the bowels are costive;
the cutaneous secretions are rarely normal;
the skin being either pale soft and
flabby, or dry and harsh; in general
the insensible perspiration is defective,
although copious partial perspirations
are not uncommon particularly on the
feet where it often has a fetid
odour; the physical powers are generally
below the healthy standard; the circulation
poor, as indicated by a weak pulse cold
extremities and inability to bear much
bodily fatigue; although, the intellectual
faculties, are often prematurely developed;
These are the most prominent marks
of the tubercular cachexia although
when this diathesis is engrained on
an otherwise healthy constitution
these distinguishing traits are not
so clearly marked.

By the term tubercular cachexia is
understood that peculiar morbid



condition of the system which gives rise to the deposition of tuberculous deposits, on the application of certain exciting causes; this state may exist from birth or may be acquired at almost any period of life;

These deposits may occur in any organ of the body, though wherever found they are always on the free surface of an abnormal membrane, the only exception to this rule is the mucous membrane, and undoubtedly here the exception is more apparent than real; did the tubercular matter exist ready formed in the blood it would not require the intervention of an adventitious membrane for its elimination, but analysis thus far has failed to detect tubercular matter in the living blood. The ultimate elements of which it is composed it is true always exist in the blood, being Albumen Fibrin Gelatin and water these being



the essential constituents, with minute traces of minute of soda phosphate and carbonate of lime; although the elements of tubercle may exist in the blood it ^{requires} a definite molecular arrangement of the secreting organ to effect that combination of elements constituting tubercle; the modes operating by which the various healthy secretions are effected is not understood Physiologists have generally deemed it sufficient to ascribe it to a vital action—

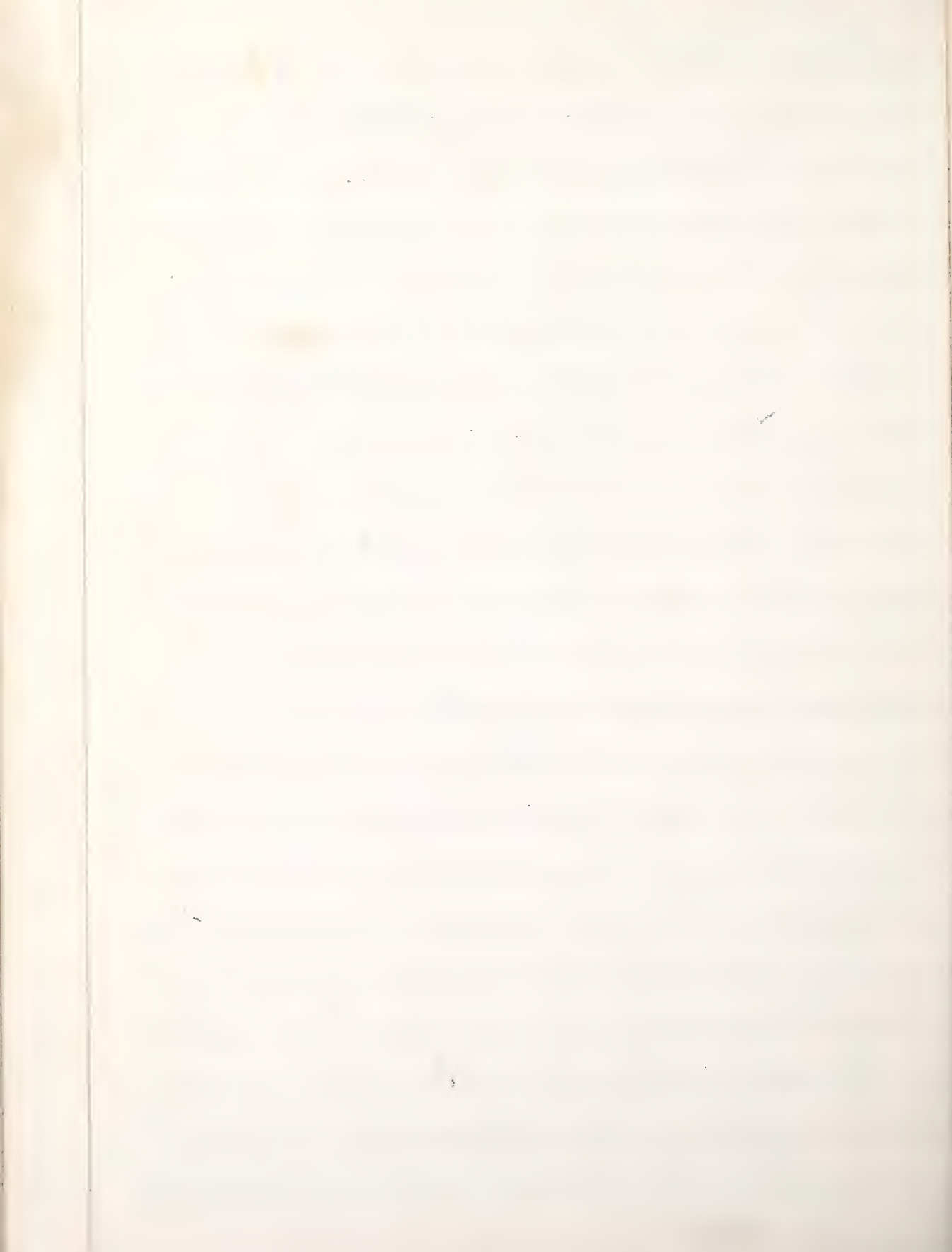
The causes of tuberculous diseases like those of most others, are referable to two classes; the remote and the exciting; or the causes which induce the tubercular predisposition, and that which determines the local deposit after the predisposition is established; the first class operates by modifying the whole system, the other by determining, in a system so modified that particular action, of which

tuberculous matter is the product;
under the head of ~~existing~~ ^{remote} causes of
the disease, ~~may be named~~ might be
named. Improper diet, impure air,
deficient exercise, improper sitting, or
anything in fact which interferes with
the nutrition of the body; when these
causes have been in operation for an
indefinite length of time the red
globules of the blood become deficient
in quantity; the albumen and fibrin
from which all of the textures derive
their nutriment are badly elaborated,
the textures are badly nourished. The
secreting and excreting organs become
changed in structure; in this condition
any very slight exciting cause, such as
checked cutaneous secretion, irritation
congestion or inflammation, may produce
the disease; and often without doubt
the predisposing becomes the the exciting
cause of the disease; from vitiated

nutrition the secreting surface may become so altered in ~~structure~~ as to secrete tuberculous matter without the intervention of any strictly speaking exciting cause.

Treatment

The most constant and important element to be considered in the treatment of tubercular disease is the diseased condition of the blood and this more demands the attention the more general and the more degraded are the deposits; the first point to be attempted is the removal or counteraction of the several causes before named, as contributing to induce the diseased condition of the blood; Thus a sufficient supply of food of nutritive quality, free access to pure dry air, and light while the warmth of the body particularly of the surface and extremities is carefully secured. The removal or counteraction



of diseases impairing digestion and
excretion, and of depressing mental emotions;
where excessive losses of blood or other evacua-
tions have contributed to lower the plastic
power of nutrition, a generous animal
diet and tonics especially those containing
iron are indicated; when the altered
condition of the blood can be traced to
an excessive quantity of ill developed
fibrin accumulating after the cessation
of growth the termination of pregnancy,
the amputation of a limb, or the sudden
stoppage of an habitual discharge, means
to eliminate the superfluous matter in
the blood either by increasing the natural
secretions, or by establishing an artificial
drain by blister or setons suppurative
counter incisions are distinctly indicated
whilst tonics and invigorating measures
may be useful to raise the plasticity of
the blood to a higher standard

The foregoing measures may be considered rather as preventive than curative, but in so far as they may succeed in arresting the growth of deposits already formed and improving the nutritive function in general. they will favor the limitation of the deposits and their gradual absorption or quiescence in contraction.

tubercular matter being a totally unorganised compound it is doubtful whether any remedy will materially promote its removal unless perhaps by the simultaneous destruction of the surrounding texture; perhaps no article in the materia medica enjoys a more deservedly high reputation for its beneficial influence on the secretions than Mercury yet from the low plasticity of the blood and the degraded condition of the secreting organs it is decidedly contraindicated in tubercular conditions; the alkalis and their carbonates, and Iodide of Potassium



have better claims to notice although their power to dissolve the tubercular deposits is very uncertain, the occasional subsidence of scrofulous tumors under their use is the best argument in their favor and they have this advantage that when judiciously administered they do not injure the blood or constitution, whether the alkalis or Iodine ever directly promote the solution or absorption of tuberculous matter is very doubtful but the signs of limited tubercles have in many instances vanished under their use and the patients have regained flesh color and strength; Iodide of Iron and other preparations of Iron, have been found beneficial in cases of general anemia or general weakness without much local inflammation or fever, the same may be said of bark and quinine which are however very useful in reducing hectic fever when it assumes an intermittent form



during the ulterior degeneration of
tubercular deposits there are generally
symptoms of increased weakness and
detraction of the blood with rapid
emanation and profuse night-sweats
at this period the mineral acids are
useful particularly the nitric and nitro-
muriatic in conjunction with sassa-
parilla or stronger tonics if the stomach
will bear them; but after the tubercles
are formed, let the treatment be what
it may the Physician must expect an
unfavourable ^{termination} result; although interesting
patients will sometimes recover health
even under the most empirical treatment
either again and the majority will die
even under the most judicious
Management

M. C. H. P. A.



XIV,

Dissertation
on
Medicine as a Science.

By
John Quincy Smith,
of Volantown,
Candidate for the Degree of Doctor in Medicine.

Gentlemen

It becomes necessary for me, in compliance with one of the regulations of this Institution, to present a dissertation, upon some subject connected with Medical science; And I am well aware, that something of this kind, will not only be expected, but absolutely required.

I think, however, it will not be expected that the Student of Medicine, in attendance upon a rapid course of lectures, in an institution like this, where the various subjects, which are daily urged upon his mind; require his strict, and undivided attention; and whose knowledge of Medical Science, is wholly theoretical; will write anything new, or Original; or at most, but little that is so; or that I shall render myself, in the slightest degree interesting, to the Honorable Board.

In selecting a subject upon which to make some remarks, I have experienced

no little difficulty; for from an almost absolute want of personal experience in the investigation, and treatment of Disease; and possessing a very imperfect knowledge, derived from the books; I consider myself inadequate to the task of treating, upon any one Disease, and doing the subject justice.

The most that I can do, is to perform the part of Compiler, if I should attempt to treat of any one disease. But, to avoid the office of Compiler as far as may be, and the trouble of making a selection, from the various Diseases which have presented themselves to my mind, I propose to make a few, general remarks upon, Medicine as a Science

In taking a view of the multifarious works of Nature, we find, that in every department however humble, there are fixed laws, and immutable principles; by which each department is governed.

Philosophically considered, a knowledge

of these general laws, fixed principles, and leading truths; or a collection of them, relating to any one subject or department, is denominated a Science. Thus for example Chemistry, is the science which has for its object: the discovery of the nature, and properties of all bodies, by analysis and synthesis; and the experienced chemist, is enabled to fulfill this object of his science, by his knowledge of the nature of the elementary bodies, and of the laws governing them in their union with each other; and of the reaction which is produced, when certain elementary bodies or compounds, are brought into a state of union.

So also. Geometry is governed by laws equally exact and immutable; and it is the knowledge, of these principles which constitutes it a Science, the same may be said of Astronomy, Mathematics, Physiology and the other sciences.

It has however ever been the misfortune ^{of the Medical Profession} (and probably ever will be), that

the laws governing the animal economy are
 less easily defined, than those regulating inor-
 ganic Matter. Although a profound intricacy,
 veils the intimate character of many of
 the laws presiding over inorganic matter, yet,
 from the general uniformity of their pheno-
 mena, the physical Sciences, dependant upon
 them, have been made to attain a compar-
 ative degree of exactness; while the principles
 governing Organic Matter, or life, upon which
 Medical Science is founded, have not hith-
 erto yielded a like uniformity in their re-
 sults.

Although many of the important
 laws of life have been revealed, still, the
 nature of life itself remains obscure and
 incomprehensible.

While Affinity, Electricity and Galva-
 nism, have each in a degree yielded their
 phenomena to the Philosopher; the princi-
 ple of life evades pursuit by its ever varying
 and novel operations.

If the manifestations of the principles governing life, were as simple and as uniform in their results, and as easy of demonstration as those governing the physical sciences; the Physician might now boast of principles as exact, as those claimed by the Chemist and Natural Philosopher; But from the ever varying nature of the laws and principles of life, and the multiplex varieties presented by organic nature; it is hardly presumable that its relations will ever be thus accurately unfolded; or be susceptible of exact demonstration.

The principles then upon which Medical Science is founded, may be defined or considered, as deductions from long observation and experience rather than from an intimate acquaintance with the laws presiding over the organic or animal economy.

It is not at all surprising then this being the position which Medicine occupies, relative to the Sciences upon

which it is founded; that, the principles by which it is governed, should be so easily demonstrated, than those of the other professions; nor that the partial fluctuations to which it has been subject, in the different eras of its history, should have occurred, or that the designing, should have perverted these fluctuations into violent convulsions, or complete revolutions (which in fact, have never taken place in the fundamental principles of Medical Science. though they may have done so in the reduction of these principles to practice) : nor is it surprising that, the unblushing pretensions of Empiricism, should mislead the public, in a Science which, least of all it is capable of comprehending.

The Medical profession have frequently been stigmatized, by those possessing a limited acquaintance with Medical Science, as a profession, destitute of those standards, by which, those receiving a Medical

education, are enabled to regulate their practice, with all the uniformity, and precision of those entering into the other learned professions.

Perhaps it is unnecessary, to attempt the vindication of the Science from such unfounded charges; Yet it may be proper, in order to repel the odium of such a charge. to state, what no one intimately acquainted with Medical Science, will think of denying; that the Science is based upon principles, which if they are not as exact, are nevertheless received, recognised, and relied upon by learned physicians; no less than are those of the other Sciences.

It would seem, subject as the Science of Medicine is, to the innovations of the designing, and the attacks, of the empiric and Quack; that a necessity, exists, for the profession generally to unite, in support of its recognised principles, in order to establish for itself, a character, by which, the Public may be

able to discriminate between, legitimate
Medicine and the baleful systems of empiricism which are so prevalent, at this
time in our country.

If evidence were required to prove the
establishment of Medicine as a Science and
to prove that it has not been subject to
the vacillations, by which, its traducers, have
been to disparage it, and to which the other
Sciences have, in a measure been subject
Reference may be had with advantage
to its history.

In glancing at this history I shall
not attempt to give a full and detailed
account, of the progress of Medicine, to this time
, but to give as brief a sketch as may be
and answer the object I have in view, which
is to trace its advancement to the sta-
tion of a Science, and so much of its history
since as will prove its title to that station.

In tracing the history of Medicine
with regard to its origin, it is perhaps

sufficient to remark, that, in proportion to the progress of civilization, and refinement, attempts would naturally be made, to alleviate the diseases and repair the injuries, to which the body is constantly subjected; or it may be said to have had its origin, contemporaneous with the origin of Disease itself.

Thus the healing art was one of the first practiced by man, and by continuing its history we find that the Science of Medicine was one of the earliest founded, and that it has withstood the revolutions of ages, almost without change except by gradual improvement.

Such history will also show that a uniformity of principle, and general practice, have characterized the Medical profession, throughout the different ages from Hippocrates to the present day.

The art of Medicine as well as the other arts, and Sciences, was first cultivated in Egypt. and we find that it had so far advanced as to have become a

distinct profession; but we do not learn to what extent that distinct appropriation was carried: whether the practice of Medicine was made the exclusive business of certain individuals, who were regularly instructed for that purpose; whether it was attached to some public functionary: as the Priests; Or whether persons in different situations applied themselves to the practice of Medicine from a real or supposed superiority in their skill or in their knowledge of the nature and manner of curing Disease. The probability is however that the Priests of the Egyptians were at the same time their Physicians: and this appears to have been the case among the Jews and Greeks.

The practice of Medicine as a distinct profession was confined to the Egyptians till its introduction into Greece by Celsus.

Then in the cradle of the arts and sciences it began to flourish and

received a new and powerful impulse,
and was cultivated as a Science by Escu-
lapius, the pupil of Asclepius. He devoted
himself to its cultivation, and made it a
distinct object of pursuit.

From this time, to that of Hippo-
crates, there is very little in the history of
Medicine, that requires particular notice, ex-
cept, that, it continued to be cultivated, as a
Science. Neither are there many Names, that
require particular notice, as improvers of
Medical Science. The names most promi-
nent are those of Pythagoras, Democritus,
and Heraclitus.

But when we arrive at this period, wh-
ch is truly an Era in M. Science, its history
is identified, with that of, one of those geni-
uses, which appear but once in ages.

Hippocrates effected a complete
revolution in his profession, and introdu-
ced a system, which, may be considered,
as having laid the foundation of all its

future improvements; and it may be confidently affirmed, that the Science is more indebted to his genius, and ability, than to that of any other single individual. He has justly been called the father of *Physiology*.

Such was the power of his mind, and acuteness of his observation, that, he was enabled to deduce principles from facts, and to apply them in his practice; and numerous are the principles which he brought forward, and advocated; which are even recognized at the present day:

For example; From observation, he was led by inductive reasoning, as I have said, to adopt the antiphlogistic treatment, in febrile, and inflammatory Diseases, as the great body of the profession do; at the present time.

His exalted reputation appears to have established this rational mode of practice among the Greeks of his own and

Succeeding ages. His writings with some few additions by his Roman successor — C. Aesculapius Galen, became the standards of Medical literature, and the guides of practice for a period of more than fifteen hundred years.

During the dark ages, in which the other Sciences were almost extinguished, we find the Science of Medicine, as established by Hippocrates, and his principles, preserved and practiced by physicians of much reputation.

After the subversion of the Roman States, Medical Science less deteriorated than the other Sciences, passed into the hands of the Arabians; where the correct principles, established by Hippocrates, flourished; and in the hands of the distinguished Rhazes, and Avicenna, it became much improved.

It is unnecessary to trace the history of Medicine, through all of its different periods, down to the present time; in order to prove its establishment as a Science, upon

Principles sufficiently exact.

It, during the earlier periods of its history, failed to attain that degree of exactness, of which it can now boast: it at least established for itself, principles of practice which are even recognized at the present day.

It is true that Quackery and Empiricism have ever been the curse of the profession, and that they have in a degree beguiled the public mind; and just in proportion, to the prevalence of ignorance and superstition, and the ingenuity and influence of the promulgators of these systems.

Thus through the influence of the Epicurean School, the Atomic Theory, for a time was a formidable rival to regular practice in Greece and Rome,

So the Chemical theory of the fifteenth century supported by Paracelsus and Van Helmont lead the world astray for a season, and even some of the Medical profession.

They anticipated that its agents would effectually counteract Disease, in whatever form it might appear, and even render the body immortal on Earth, But the reaction of a rational Science dissipated these groundless theories, as it will the absurd and unfounded theories of the present day.

The general prevalence and popularity of these absurd Systems, strongly evince the existence of an element in the human mind, which leads it more readily to grasp at the mysterious and incomprehensible, than to embrace the truth as evinced by such principles as are susceptible of demonstration.

It need not be surprising, then, that in a Science like that of Medicine, where the manifest recedes into the unknown, and the physical become blended with the more subtle and mysterious vital laws: the unprincipled should, instead of resorting to the labor requisite for the attainment of true Medical Science, intrude themselves within the

men, and under the pressure
of the ignorant and superstitious, with the
view of obtaining, for themselves, popular
fame, and fortune

The profession have indeed still as they
did formerly, to lament the perversion
of the human mind, and to witness the
attempts of ignorance, and arrogance, to usurp
the station, which is due to modest desert
and patient research; but such attempts
for the most part, obtain only temporary
success, and will after an ephemeral
celebrity, be consigned to their merited con-
tempt, together with their miserable orig-
inators.

But although illusion and error have
thus occasionally obscured, and are still en-
deavouring to obscure the path of true Medical
Science; yet the progress of knowledge has
been and still is rapidly advancing,
Experiments well devised and patiently
conducted, have been performed in every

department of Physiological and Medical Science; Observations have been made with great minuteness and recorded with the greatest accuracy; the improvements made in the knowledge of chemistry, has enabled the profession to introduce important reforms into pharmacy; while the discovery of new articles of the *Materia Medica* has given them additional and powerful means of opposing the progress of Disease.

Now in conclusion— in reviewing the history of Medicine, in its undeviating course through successive ages; its progress in comparison with that of the other sciences, through the period when universal night overspread the literary world; when they with their boasted fixed laws, truth, and rational principles, were almost extinguished, while medical Science was preserved almost without deterioration, In the foundation

and preservation of principles, which at this period are recognized as guides to the profession, both in the investigation and treatment of disease.

Also the general recognition of its merits by the intelligent of this period, as well as its recognition and support by the most powerful minds of former times. Do these facts not afford conclusive evidence, that it is based upon that truth which it is the aim of the human mind to obtain. Do they not afford ample evidence that it is entitled to the station of a Science and that of no mean order.

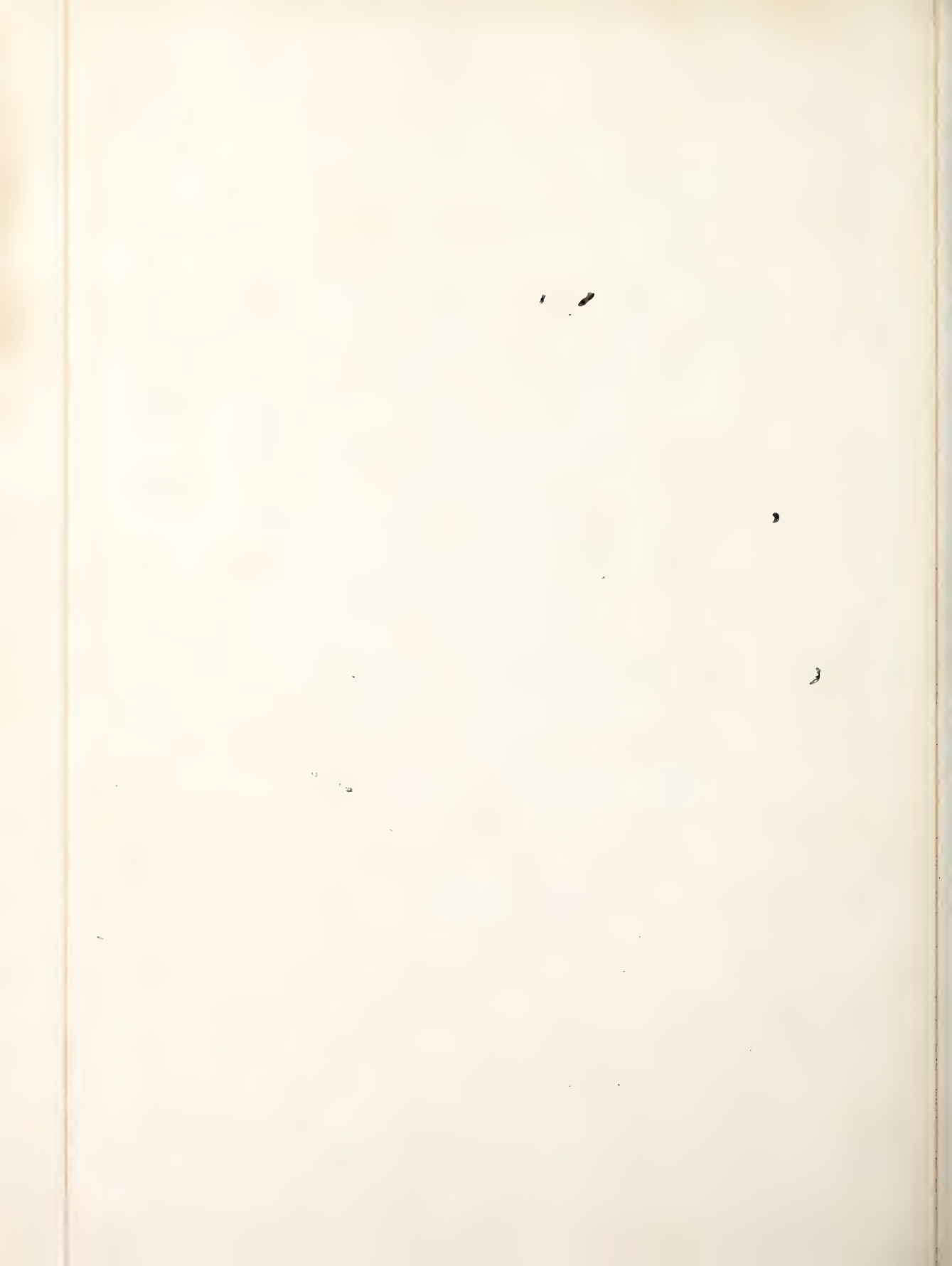
It is only requisite, then, the intelligent generally being convinced of the merits of the Science as founded upon correct principles for the suppression of Enquiries and their delusive systems; that its principles should be promulgated in such a manner that the public in general may be able to comprehend and

appreciate them. How this is to be ef-
fectcd, I am not qualified to say; neither
is it any part of my present purpore, nor
my province, to speak upon this subject.

{New Haven Aug 14th 18-1}

E. L. Smith





XV.

Dissertation
on
Necrosis.

By
Edward Brown Sprawl,
of Natchitoches, Louisiana,
Candidate for the Degree of Doctor in Medicine.

Necrosis.

On looking into the human body for a portion which is not subjected to disease; we are unable to point out a single tissue or structure which is not liable to its ravages in some of its multifarious forms. The fibrous, the serous, the mucous and cellular tissues are all, equally, prone to its action.

But to enter into a full description of all its forms as it appears in the various parts of the system, would occupy, by far more time than is allotted to me at present; nor is it my intention to do so. We find that inflammation is almost always present, either as a symptom, cause or as a consequence of disease.

But inflammation, when present, is not always to be regarded as a disease, but frequently as a salutary process absolutely necessary for the cure of disease.

But we do not find that all parts of the human system, are alike subject to diseased action; but that one portion is more liable than another.

Thus we more frequently find the lungs and their appendages, suffering from disease, than the heart and its appendages. So also do we find that the soft parts, are more frequently attacked than the solid - And I believe it to be true, that in all cases where the lungs are attacked the surrounding soft parts are more or less affected as a consequence of the diseased state of the lung - But on the other hand, we do not find the lung implicated always, when the soft parts around are originally diseased; though from various causes, either external or internal, the lung may also be affected at the same time.

It seems that there are organs which perform functions and offices important and necessary for the proterogation and sustenance of life, are more rarely diseased - but sometimes the slightest deviation from a healthy action, in these organs, will derange the whole system, whereas those parts of less importance may deviate largely from a healthy state, and the

constitution be but little or not at all affected. Nature seems to have provided for the vital organs, more efficacious means for the purpose of protecting them from the invasion of disease, than those which are of minor importance.

Take the osseous system, apart from mechanical injury, and it is more rarely diseased than almost any other part of the animal economy; of course this is subjected to a few exceptions. The age of a person and the peculiarities of constitution may render one individual more liable to affections of the bones than another. Such as a scrofulous habit of body, or a syphilitic taint, which exert their influence upon this structure through the medium of the constitution. But generally, I believe the bones to be less frequently attacked than, almost any other part of the body.

The bones are supplied with blood vessels, nerves and absorbents; thus in general circumstances resembling in texture, other

organised parts of the body - the greatest difference being, that the veins contain more phosphate of lime, which gives to them rigidity, strength and solidity, so essential to their uses in the various parts of the skeleton.

Bones have the greatest power of regeneration, than almost any other part of the whole system. Disease in its commencement, progress and decline, in the osseous structure, evince more strength of character than when seated in the soft parts. Dr Samuel Cooper says, that no doubt, these facts are connected with the introduction into the osseous tissue of a lifeless inorganic calcareous matter, and also, with the inferior supply of nerves. Diseases of the bone do not affect the general constitution so much as when seated in other parts of the body. - But if the disease be extensive, with severe inflammation of the soft parts, and of long duration the constitution will suffer.

Bone like all other parts of the body, is

subject to inflammation - It may be acute or chronic, simple or specific - It may be produced in a single bone from external or local causes, or in several, from a predisposition of the osseous system to inflammation. The periosteum and medullary membrane may be inflamed without the substance of the bone being implicated, but generally when the bone is the original seat of inflammation, it extends to the periosteum and medullary membrane.

(The terminations of inflammation of the bony structure are the same as that in other parts of the body. It may terminate in caries, which corresponds to ulceration in the soft parts; or it may terminate in necrosis, which is the same as mortification of the soft parts. But necrosis is caused by many other circumstances, which will be noticed when we speak of the causes of the disease. Necrosis and caries may be the effect of previous inflammation, or they may come on without any symptoms

of a purulent inflammation.

Diseases of the bone generally run a slow and tedious course. In fact this class of disease is the most curious and troublesome affection, and not altogether without danger to the patient. It is not however but not always dangerous. There is scarcely no disease, which it is far beyond the reach of medicine at this class. In chronic inflammation of bones the swelling comes on slowly, and the hardness is almost insensible. The swelling is sometimes caused by abscesses, by interstitial deposits, or by the deposition of a large quantity of phosphate of lime. Sometimes the phosphate of lime is taken up by absorption, so that as the bone becomes enlarged, it also becomes porous, and consequently lighter than natural.

As to the effects produced in bones by the action of inflammation, depends upon the extent and cause of the morbid action. But for me at present, to go through with all this, with an accurate description, would wear the

patience of this Honorable Board. The pain which is felt, also depends upon the extent of the inflammation, or virus, also upon the violence of the attack. In cases where the disease is brought on by the effects of Syphilis, the pain is the greatest at night.

When the symptoms are violent from the beginning, in the course of the disease it more rapid in its progress, and ends sooner than when it begins in a milder form. Thus, when a man goes to bed at night well, and is attacked with a deep seated pain in the leg, in the middle of the night the pain followed in a short time, by swelling of the part, accompanied with severe inflammation of the soft parts, an abscess soon forms, and the whole course of the disease is completed in the space of six weeks or two months. But more commonly many months and even years pass away, and the disease continues, with a continual discharge of pus from the diseased part, undermining the constitution, producing irritative fever, followed

ly hectic, and all its consequences. Necrosis is as common, perhaps more so, than any other disease of the bones. Necrosis is the death of a bone. It may be a part, or it may be the death of the whole bone. It is rare that we see the death of a bone inclosed - but cases do occur, where the whole length of a bone is found dead. It may involve the whole three layers of the bone or it may be only the external portion.

It may attack any and all of the bones, in the body, at any period of life, and in either of the sex. Those that are most frequently attacked, are the long cylindrical bones, and those of the hardest texture - the spongy bones being more frequently affected with caries.

Necrosis is found oftener in the tibia and fibula next, the femur and lower jaw. Sometimes the scapula and the bones of the head are affected. In children and young persons the long bones are oftener affected with necrosis than at any other period of life. In persons from thirty to thirty five years of age, the flat

bones seem more prone to Necrosis. I am unable to account for this.

Symptoms. Necrosis comes on with a deep seated pain, of more or less severity, followed in a short time by enlargement, with inflammation of the soft parts. And if the inflammation be extensive and severe, there will be constitutional disturbance. An abscess forms and matter is collected and is discharged, and perhaps, after a time the dead bone is also discharged. But the discharge of the sequestrum depends upon circumstances, and often requires a considerable time for this to be accomplished.

Necrosis may be divided into three different stages, according to the condition of the bone.

The first stage is the primary of the disease, characterized by inflammation of an acute nature.

In the second, the sequestrum is produced, but not detached from the sound bones.

In the third stage, the sequestrum is not only formed but loose. The sequestrum is now to be considered as an extraneous substance, which, as long as

retained in the limb, will keep up irritation and suppuration.

A portion of the bone loses its vitality and a new bone is formed around this dead bone, which in some instances completely surrounds it. In a varied length of time the sup^{pur} is discharged through one or several small openings of a more or less circular form. Through these openings, there appears a fungus growth, which is pathognomonic of the disease in joints.

When the sequestrum is loosened, it may be discharged in a few or a shorter time, or it may remain during the life time of the patient. Some time after the formation of the canals just mentioned, the bone becomes better, and a portion of the sequestrated bone protrudes, which when thus protruded may be discharged. As soon as the matter is discharged the sufferings of the patient are greatly diminished. Could the sequestrum now be discharged, the disease would disappear. The new bone is generally formed before the sequestrum

is detached from the living parts of the bone,
so that the whole course of the disease may be
completed without the loss of the use of the limb.

The symptoms of this disease vary according to
the cause, extent and constitution of the individual.

The causes of necrosis are external
and internal. The external causes are fractures,
contusions, and sometimes the application of
caustics to an indolent ulcer upon the skin.
The tibia is more frequently attacked by this
disease perhaps from its being covered by
soft parts, and being more liable to bruises
than most bones of the body. The internal
causes are such as exert their influence upon
the diseased part, through the medium of the
constitution: such as a hereditary predisposition
of body - lues venerea, and the debilitating
effects of malignant diseases - such as small
pox, typhus fever, and measles. In fact any
thing that affects the pericosteum, the substance
of the bone and the medullary membrane in
such a manner as to interrupt the

medication, incision of the bone, will cause its death. The injudicious use of mercury in the cure of Syphilis, is often the cause of Necrosis. When it arises from this cause it commonly attacks the lower jaw, sometimes causing the destruction of the whole of the bone.

When caused by the effects of Syphilis, the pain is greater at night when the patient is warm in bed.

Necrosis is sometimes the consequence of inflammation, though it sometimes makes its appearance without any symptoms of previous inflammation and again it arises from no assignable cause whatever. The causes of Necrosis may also be divided into predisposing and exciting causes. The predisposing causes being constitutional proclivities, and cold and mechanical injuries being the exciting causes.

Diagnosis. Necrosis has been confounded with Caries, though the two diseases are as different and distinct as ulceration and mortification of the soft parts. Caries is one of the —

consequences of inflammation of the bone, some of whose textures are absorbed, so that a charum is formed without the loss of vitality. while in necrosis another condition of the bone is found, being the complete or partial death of the bone, followed by the formation of a new one, or by a more or less repair of the part destroyed. Caries mostly affects the spongy portion of bones - while Necrosis more commonly attacks those that are of a solid and compact texture, containing more of phosphate of lime. This is so much the case, that the same cause that excites Caries of the spongy bones, would if its influence were exerted upon the more solid parts of the skeleton, excite Necrosis. But both of these diseases may be found at the same time - but rarely do we find such a combination. There is a difference in the discharge, from the two diseases - which of itself is almost diagnostic of the diseases. That of necrosis being of a

healthy character and that of caries
of a soft and unhealthy nature, making
black the inner part when introduced into
it. Necrosis of the lower end of the femur
has been mistaken for white swelling of
the knee joint. By passing the hand along
the bone from the condyles upwards, and we
find that the bone is thinned about a
hand's breadth, up the bone, the disease is
necrosis. Sometimes there is an abscess
formed between the bone and the muscles
just above the condyles. The swelling is
often firm and unyielding to the touch.

Necrosis differs from common exfoliation in
that the new bone is almost always formed
before the old bone separates from the living
parts of the bone; it resembles it, in that
there is always a pulpy membrane between
the sound dead bones.

The prognosis of this disease depends
upon the bone that is necrosed and the
severity of the symptoms that follow.

If the articular portions of the bone are destroyed or involved in the mischief of necrosis, with the shaft of the bone, at the same time; the prognosis is unfavorable, and nothing short of amputation of the limb, will save the life of the patient.

This disease is so uncertain as to the extent that the bone is diseased and as to its duration, that it is no easier matter to form a correct prognosis. Especially in the early stage of the disease. If the sequestrum has been discharged, we may promise our patient a prospect of recovery. But until this is accomplished there is no probability of recovery. Its presence is a source of irritation and suppuration, and the constitution will suffer greatly from the continuation of the discharge, and the patient be destroyed.

Treatment—The treatment must vary according to the stage of the disease and the severity of the case. Suppose that in

the first stage, when the sequestrum is not yet formed. The disease involves a laceration of the bone accompanied with violent and extensive inflammation of the soft parts. All that can be done here, is to use our endeavors to check the inflammation. Then as in all other inflammatory diseases, the antiphlogistic treatment is the best means of combating the disease. If the patient be of a plethoric constitution and the fever is high, with a full strong and tense pulse we may bleed from the arm. with local depletion, by means of leeches and cupping, fomentations and poultices. Saline purgatives and diaphoretics - From the nature of the disease, namely, from the circumstance of its unavoidable and speedy complication, with a portion of the bone deprived of vitality, having up irritation as an extraneous substance, all that can be done is to lessen the inflammation and alleviate the sufferings of the patient. The sequestrum will be formed,

the removal of which either by a natural process or by the interference of the surgeon, is absolutely necessary for a favorable termination.

As soon as matter is known to be present, which can be distinguished by the feel of fluctuation, a free opening is to be made, so that an early discharge of pus may be produced. In the second stage, the dead bone is formed, but still attached to the living bones. In this stage, we are obliged to wait for the natural separation of the sequestrum; as there is no medicine yet discovered that will hasten this process.

It requires a greater or less length of time - months and sometimes years, for the old bone to become reparate and loose; for this process is particularly slow. In young persons and children the reparation is quicker than in a more advanced age.

The third stage. The sequestrum is loose and regarded as a foreign body. The indication is to remove it - and if this is not accomplished

to the effects of nature, it must be done by
the surgeon. If the constitution be healthy,
the discharge diminishing in quantity and
the fistulae are disposed to heal, we must
wait for the natural discharge of the bone;

But if the constitution is suffering from
debility and the discharge of pus copious,
and the sequestrum known to be loose, we

it becomes an object to remove it
by an operation, which consists in cutting
through the soft parts and cutting away
as much of the nec bone, which encloses the
dead portion, as will admit of its free-
removal. The treatment varies in certain

cases. When a portion of the tibia becomes
dead and the skin ulcerated, and the dead
bone is exposed, and turns black, and —
undergoes no further change for some time,
we may suspect a syphilitic taint of the
constitution and Mercury is indicated.

But if the necrosis be caused by the injudicious
use of mercury the Nodules of Potassium is

used with advantage - If the constitution of the patient becomes weakened from the continued discharge - Tonics should be used such as Barks with wine &c. Sometimes all our plans of treatment fail us, and the patient is gradually sinking under hectic symptoms, characterised by the evening exacerbations, night sweats, and the circumscribed redness of the limb called the hectic flush. here amputation becomes necessary for the safety of the patient. This operation should not be performed during the circulatory stage of the fever, but on the appearance of the hectic symptoms - Usually if the patient has sufficient strength, after operation the stump of the limb will heal quickly and necrosis terminated with the loss of the limb - We should always try to effect a cure without the loss of the limb if possible - But when this cannot be done it is our duty to resort to the operation of amputation -

Sometimes the disease is easily cured,
when the general constitution is healthy.
but if there be an unhealthy condition
of the constitution, sometimes all our
remedial efforts are unavailing and the patient
gradually sinks into another state of existence.

(This the 19th day
of January 1848 }

Edward B. Howard
of
Vatchitocet

Laⁿ



XVI,

Dissertation
on
Cynanche Trachealis.

By
Granville Taylor,
of Danbury,
Candidate for a License.

828

Cynanche Trachealis.

The disease known by the name of Cynanche Trachealis, - Tracheitis or "Croup" is an inflammation of the mucous membranes of the Trachea or wind-pipe. Sometimes the inflammation extends into the bronchi, or into the Larynx or into both according to its extent. It is a remarkable disease from the fact that it shows an event of inflammation that does not usually belong to that process when it affects mucous tissues. It is also a disease peculiar to that period of life which occurs between the age of weaning and that of puberty, rarely affecting children during the first year of infancy, and sometimes attacking persons in more advanced periods of life. It is more commonly seen during the second and third year, owing perhaps to the change of habit that must necessarily occur upon the weaning of the child. From this period on, the number of children attacked decreases in number, which is one characteristic of the disease.



Croup is generally sudden in its attack, violent and rapid in its progress, and unless met by prompt and decided treatment in the beginning, is generally fatal in its results. Sometimes the symptoms resemble those of a common catarrh, such as sneezing, coughing, &c., accompanied with hoarseness. This last symptom does not usually accompany the common catarrh in children, and should therefore be looked upon as an attendant on this disease alone. With these symptoms, the child is usually feverish & fretful, and does not sleep well. More commonly, however, it is announced without any preliminary symptoms, by a peculiar harsh, dry, and ringing cough, difficulty of breathing, and sonorous inspiration. This peculiar crowing sound that follows both inspiration and expiration is often sufficient to identify the disease. At the same time, there is no difficulty in swallowing, there is inflammatory fever, a flushed face, a hot skin, a frequent, hard pulse, and thirst. It is by taking the symptoms collectively that we judge of the disease, for some



of these may be present and others absent; and it has been said, that the remarkable sound which marks the disease may take place without croup being present. At times, it attacks patients very suddenly; perhaps they retire as well as usual, and awake with all the violent symptoms of the disease. I believe that whatever previous symptoms may occur, the peculiar symptoms come on in the night. But I will pass this over, and speak more of the symptoms when I come to the treatment of the disease.

Croup is often fatal within twenty four hours, but more commonly it is extended to three or four days, and sometimes to a week or more. It has been stated by writers that this disease is peculiar to certain localities, such as low and damp places, and on the sea coast, owing to the fact, that it is often occasioned by a changeable state of the atmosphere. But it has been seen in all localities, especially in more northern climates, and in the temperate regions.

It occurs more common in the approach of winter, and in the spring. Sometimes it follows other diseases.



es, such as measles, scarlet fever, &c. For this reason, it has been divided into two forms, Idiopathic, and Symptomatic. It is called idiopathic, when it is the primary disease, and symptomatic when it follows others. In which ever form it may appear, I cannot find as there is any difference in the treatment, or in the symptoms, otherwise than that there is more danger in the consequences. Some writers have considered it as contagious, but at the present day it is generally thought not to be so. If this is a contagious disease, why should it be so more than any other inflammation of a simple membrane of the body?

Children, who have had this disease, are, like those who have been attacked with hoarseness, & many other inflammatory diseases, liable to a return, and repeated attacks; therefore, they should be carefully watched, and prevented from exposure to cold and damp air especially after warm days, followed by cold and damp nights in the spring or fall. As this is a disease of infancy, the sensibility of the patient to a return of the com-



-pneumonia is happily diminished. Though there is great danger following a second attack, it is not as great as at first, though there are exceptions to this fact.

In most cases of croup, there is a concrete membrane-like substance, which is so peculiar to it, that it is called the membrane of Croup. In some cases of recovery, this membrane has been thrown up nearly entire, at other times coughed up in flat or tubular fragments. In fatal cases, it is often found in close contact with the mucous membranes, at other times detached from it so that it might have been coughed up if sufficient muscular energy had remained. Probably, it is not owing to this formation alone that causes the death of the child, but in part to the spasmodic irritability of the Glottis which accompanies the disease, and which is supposed to cause this peculiar crowing sound.

I shall ^{not} enter into a discussion of the various reasons which are given by different writers, for the formation of this membrane which is always



found on post mortem examinations, or else very extensive inflammation. Neither will I give the hypotheses that have been woven to account for this product of inflammation in the period of youth. ⁵⁷ The formation of this membrane is very rapid and even its reproduction is so, when removed either by operation or by coughing, sometimes forming in six or seven hours. The presence of this membrane, gives a plausible explanation of one of the symptoms observed, that is, the tendency to throw the head back. In this position, the tube of the membrane is kept open, when, if the head is thrown forwards, it brings the sides closer together and thus obstructs the passage to the lungs. Those who die with this disease generally exhibit a high degree of congestion of the lungs, and of the vessels of brain.

Croup always excites alarm in the friends and parents, of the child, from the fact that the prognosis is always doubtful. It has been said that in former times, it was attended with greater mortality than at the present time, owing to the more light having been thrown on the treat-



ment of the disease. The probable issue of the ^{disease} must be judged of by the apparent symptoms and progress. The prognosis is chiefly to be collected from the general condition of the child, as we have no means of knowing the extent of inflammation on which the danger depends, except from these external indications. If the distress of breathing seems to remit, and free expectoration comes on while the patient has strength left, we may yet hope. On the contrary, when the violent symptoms continue unchecked, the result will be unfavorable. Like all other rapid and highly dangerous diseases, the mortality will differ according as it is detected early and met by vigorous and energetic treatment, or otherwise.

In treating of this disease, I shall divide it into three stages, because the different periods of the disease require different treatment, as they are characterized by different symptoms, & as being more or less dangerous, as either one or the other of these stages are present, as well as afford



ing a better arrangement in the description of the disease itself.

The first stage, is called the forming, the second is called the infl. stage, and the third suggested. In the first stage there is usually a severe, dry, and hoarse cough, the pulse regular, and small, tongue not colored, faces natural. Sometimes the pulse is trembling, and often the patient is chilly. The paroxysms of coughing are from 5 minutes, to half an hour. There is some difference of opinion among practitioners as to the treatment in this stage, but in general they recommend and employ emetics, not only to empty the contents of the stomach, but also for the other effects which emetics produce upon the body. They relax the system, reduce the action of the heart, determine the fluids to the skin, which is the antagonism of the mucous surfaces. Producing at the same time, a copious secretion from the fauces, which unloads the congested state of the Glottis.

The emetic usually employed is Tartrate of Antimony. Three or four grains are dissolved in ^{soft} water



and a tea-spoonful is given every fifteen minutes untill free vomiting is produced. As this is a rapid disease, we must not be governed by quantity but by the effect produced. Constant nausea should be kept up to prevent the return while fomentations and the warm bath should be used in connection. Other emetics, sanguinaria, seneca, &c, have been used in connection, or alone. Some have recommended bloodletting, but in most cases emetics in this stage have generally answered all the indications, and usually prove successful.

Calomel has been given to effect the secreting system, which is known by the alvine discharges, when they resemble chopped spinach. If these remedies have ^{been used} without success, the child soon passes into the second, or inflammatory stage.

Perhaps from inefficient family treatment, or from ignorance of danger, the physician is not called untill this stage is present, which is known by the hot skin, flushed face, pulse tense, and sometimes full, respiration is difficult, tongue covered with a



white fur, and rarely any interval between the paroxysms of coughing. When it arrives at this stage, local and general bloodletting is adopted at once, to remove the local congestion, and to assist the actions of Emetics and cathartics. These are also assisted by inhaling the steam of warm water, and by the warm bath. After bleeding, the emetics are given for the same purpose as before, as is also the salinels, especially if the disease assumes a bilious form. Emetics are applied to the throat sometimes.

If the disease continues unchecked, the third, and most generally a fatal stage comes on. The voice is lost, there is lividity of the lips and face, and the child gradually sinks, or is lost in a violent paroxysm.

In this stage, bleeding is not generally indicated, as well as those things that relax the system because they diminish the secretions, as well as the power of ejecting the matter secreted. Stimulants, and such things as support the system should be used. But as



a general thing they are if one avail. Bronchotomy has been performed, but as a general thing without success. It might be resorted to with a bare possibility of success, when every other remedy has failed.

There is a condensed report, given in Woods quarterly retrospect, of two cases of Croup which was treated by Dr. Blackman of New York, by a solution of Nitrate of Silver. In the first case, in which the symptoms were well marked, emetics had been given without producing any benefit from the vomiting, and Calomel had produced copious evacuations from the bowels. The symptoms of asphyxiation of suffocation continuing to increase to an alarming extent, the Larynx was cauterized by a Sol. Nit. Arg. $\mathfrak{z}\text{i}$ to $\mathfrak{z}\text{i}$ of water. A thick tenacious substance was brought away with the sponge, and a free respiration followed. In ten minutes the operation was repeated with



the same effects, which seemed to arrest the disease. Five hours and a half after, all the ~~symptoms~~ the symptoms had improved. The sponge was again used, and after the subsequent vomiting the patient fell asleep, requiring no further treatment. In the second case, it "was determined that the remedy used last in the first case, should be the first in this, and made two applications of the sponge with the same strength as before employed. Some tough phlegm came away on the sponge, and no vomiting followed which relieved the patient so that he fell asleep." There are two cases, in which this disease has been treated successfully by this remedy. Future experience alone can testify, as to its real value, but from these cases it bids fair to become a valuable article in the treatment of this disease. As Croup is a specific inflammation of the parts affected, this remedy by producing



ing a different action more allied to common inflammation, may check the specific action and in this way overcome the disease.

There is a disease called *laryngismus stridulus*, or "Thasmodic Croup", which has some resemblance to croup, and with which it is often confounded, but from which it is manifestly different in many of its symptoms. I will not occupy time in pointing out this difference as croup, & Croup strid, is the subject on which I have written.

New Haven, Jan. / 48.

Granville Taylor.
— ("R") —



XVII.

Dissertation
on
Civil and Military Surgery.

By
Sigismund Waterman,
of Germany, Europe.
Candidate for the Degree of Doctor in Medicine.

Civil & Military Surgery Practice.

Gentlemen!

The intelligent surgeon perceiving the stern code of his profession, dwells with sad emotion on the amount of mutilation, which he is called upon so often, to inflict, in order to relieve the sufferings of his fellow man. He will glance with an anxious eye, over the long list of bloody experiments, and frequent failures, summed up in the many valuable works of surgical writers. A question here arises of the greatest importance viz: "Are the laws & principles laid down by military surgeons, binding on the practitioner in private life?" The answer to this inquiry, I have made the subject of the present Dissertation. To me it seems, that there is something in

in the very nature of military practice, that ought, if possible to be separated from civil practice. The military surgeon takes his laws from iron necessity. The gloomy or exciting spectacle in the hour of a desperate conflict, between contending armies: the field reeking and stinking with the gore of slaughter: Aesculapius is not in my opinion the proper school, which should legislate for our civil profession! Whatever be the experience at the command of the military surgeon, however great the number of cases, which come under his eye and treatment: whatever opportunities he may have, to perfect his manual skill and extend his knowledge by observation, the principles laid down by him should be received with (due caution). For where thousands fall a sacrifice to the single sweep of a well directed battery, where the heart-rending cries of wounded legions claim immediate attention, the military surgeon will often consider himself justified in establishing a practice, which would altogether, inadmissible in private life. And how is military practice after a fought battle? Is it less stern and merciful, in temporary hospitals, void of many of the conveniences and resources of the civil hospitals, accumulate the bruised remains of the noble forms that sought the strife, in the glow

of manhood. Groans & expressions of suffering in its manifold stages rent the skies, humanity in its misery and despair appeals to the surgeon for help. Is it to be supposed that he will investigate and follow the genial laws of the healing art? Is not despatch the leading principle to be continually kept in view, since such peculiar & urgent circumstances? Is this state of things not calculated to ^{urge} upon the surgeon a practice, dictated by necessity, of too revolting a character to be admitted in private life? The military surgeon has to contend with the manifold predispositions & consequences to disease in military life which will break forth in a formidable train with their morbid phenomena, at the receipt of a wound, or the accession of a malady, calculated to exhaust the system and to prostrate the powers of regenerative nature? And although it is true these morbid phenomena may counteract at times our efforts in private life & practice, yet the instances in which we experience these difficulties are comparatively rare; the ravages of erythema & erysipelas are generally milder in their type, hospital gangrene & hospital fever although well known in private practice, have a limited sphere only & may be

easily controlled. Not so in the field; far from the fostering
care of kind relations & friends - no consoling voice near
to soothe or keep the tormenting agonies of body & mind,
surrounded by humanity in its manyfold stages of de-
cay, the well tried companions of the conflict. Struggling
with approaching death, an atmosphere charged with
the offensive effluvia arising from surfaces, undergoing
the processes of suppuration, ulceration & modification
frustrating the efforts of nature, and extinguishing especially
the vital powers.

Such is a faithful representation of the practice in the
field, such the emergencies the military surgeon is
called upon to meet. Is it to be wondered then, that his
practice by reason of its stern principles should be found
inadmissible in private life, where all or most of these dis-
advantages do not exist? Is it to be wondered at, that the civil
surgeon longeth for a code of his own, whose laws should
differ from the military code, as divine peace differs from
bloody war? Such, Gentlemen, are the considerations
which will strike every surgeon, about to take upon
himself the responsibilities of his profession. It is not
misapplied softness of fibre, or nerve; for this would unfit

the man for his profession, but philanthropy in its purest light, claiming from us to mitigate the sufferings of our fellow beings if possible, & if consistent with their safety.

Guided by these gentle feelings I have examined some surgical laws, which will allow of some modification, and among the endless material offering itself to our inquiry we will take up "Amputation." The laws in military practice with regard to this question are the following.

I If amputation is necessary at all, it has been, is the practice to amputate on the field: see Hunter on Gunshot wounds Chap. II. (Does this law not conflict with our views in private practice? In the field the nature of the case & the proper want of surgical attendance afterwards may warrant it, but would this be justifiable in the civil surgeon? no! he would not be justifiable to amputate in the street or highway for many & very important reasons. In the first place if the injury is of the lacerated & contused kind, the extent of such an injury cannot be precisely known at the time in many instances. Intestines have been known to be injured without betraying it, to the eye & amputation having been performed, secondary hemorrhage ensued the artery injured having sloughed above the point of

of the amputated limb, the patient's dies from loss of blood.
In the second place: Amputation should not be performed
at all before the system has recovered from its first shock,
reaction is about to be established, because the shock of
the operation added to the shock of the injury, is adding violence
to injury, may be more than the patient will be able to bear.
It has been said indeed by Hunter that an operation of this kind
should, not be performed before the primary inflammation has
run its course, showing that this distinguished light of the
profession, has felt the necessity of this military law.

II. In extensive injury of the larger joints an operation
is performed.

We ought not always in private life be guided by this law.

If such an injury, however extensive, is an incised one, it
may yet, heal by first intention, if the lips of the wound can
be brought carefully & precisely together & kept there in proper
contact by adhesive straps, enjoining or enforcing perfect
rest by splints & bandages. Inflammation may be obviated
under this treatment & even should it ultimately ensue, en-
dangering of course life & limb, amputation may then
be resorted to & prove as successfull as if performed im-
mediately. It will pay to make at least the attempt, for the

saving of a limb is infinitely more honorable, than to amputate a thousand.

III. Where there is extensive loss of substance, or disorganization of the soft parts in the field, amputation is considered justifiable. It may be so there, where circumstances forbid other treatment, but, in my humble opinion, loss of substance alone, however extensive, should not guide our judgement or call up our decision. Too many cases are known in private life where the loss of limb seems inevitable, still the patient resisting an operation, the process of suppuration went on, the patient bore up under the heavy and wasting discharge, finally recovered with a good - useful limb. If then there is the least prospect that the patient would bear the waste of the suppurative process, amputation should be delayed, as it may be resorted to afterwards should the first course of treatment prove unavailable.

IV. Compound fractures near the joints, with or without laceration of nerves or bloodvessels, in connection with comminuted bones, especially where the femur is the fractured bone, are considered by military surgeons, accidents, where amputation may be performed with great propriety.

That in some instances amputation may at once
be resorted to in compound fracture near a joint admits
of no doubt or dispute. But these cases seem to be rare.
Should in connexion with a compound fracture the
fractured bone be smashed & comminuted, the large
Arterial vessel ruptured, so that the limb could no longer
be nourished by anastomosing branches & in conse-
quence of this, when furthermore the great nervous
trunks, supplying the limb with sensation, motion
in fact with vitality, are severed & lacerated, amputat-
ion of course is our only means to save the patient's
life. But the nearness of a compound fracture to the
joint even accompanied with laceration of the arte-
ries & nerves, cannot exclusively excuse amputat-
ion. The compound fracture may heal gently, rea-
dily by first intention, the bone be nourished by anas-
tomosing branches & nervous influence established
by ganglionic connection, and the patient recover with
a good & useful limb. A fifth law (see Dr Jenner
v. Osborn) the bones have been fractured or dislocated
without rupture of the skin, or even without great loss
of joint, but with injury to the ligaments & vessels

followed by extensive effusion; it is considered proper to amputate.

It is true an injury of this kind leaves little hope beyond the knife. When the bones are dislocated & fractured, the ligaments extensively lacerated, the bloodvessels in addition pouring out a fearful quantity of blood & a speedy removal of the limb is too often necessary in order to save life. Still, where the dislocation is partial or easily reduced, & the fractured bones in favorable positions, where the amount of laceration of vessels is not great, or where the hemorrhage may be readily controlled by ligatures above the injury, amputation may at times be dispensed with. Not here the injury is below the sound skin where a comparative severe wound will heal more readily, than if communicating with an external wound.

Rest & position & a prompt antiphlogistic treatment may obviate inflammation after the reduction of the fractured & dislocated bone, the artery may be promptly secured, the ligaments adhere & the parts restored to a state of comparative usefulness. If then the symptoms do not call very urgently for speedy amputation, the limb may yet at times be saved, although in this instance it seems

mere possibility to effect it

Before we draw our final conclusions the writer solemnly protests of being in any way opposed to any kind of surgical operation, however formidable and dangerous, having a smile of pity for the tennerved Bilguerites & a sympathetic sigh for the miserable sufferers who drag out their existence with stumps & limbs encumbering their motions, being a burden & useless to themselves.

Gentlemen! I have presumed to state my views on the subject under consideration with candor & frankness, perfectly open to conviction should experience prove me in the wrong. Should however experience agree with the product of the present reasoning, it should bear with some weight upon practice in general. Instead of plunging his formidable instrument into the quivering fibres of his fellow man with strange delight and irreparable haste, sound judgement and ripe deliberation will demand of the surgeon preserve & restore. The inexhausted resources of nature & of surgical science will be in the same degree developed, as we are called upon to treat on the principle

of preservation more frequently & if sad necessity
commands a capital operation, all parts con-
cerned in the final result will feel relieved from
heavy responsibilities. And as we honor the sur-
geon of the field, as we give due credit to his
contributions to our science, he will readily also
respect the principles of the practitioner in private
life & approve of his motions to meliorate the
stern laws of military practice.

Edmund Waterman.





XVIII,

The
Valedictory Address.

By
Henry Adams Williams, B.A. Harv. Coll.
Candidate for a License.

Notes of some of the difficulties of
The Study of Medicine.

Henry A. Williams.

Gentlemen—

We have arrived at the end of
our course. We have met, probably, for the last time. The ties
formed by companionship in similar pursuits, are now to be dissolved.
The generous, impulsive, student-like, it now to be exchanged for
one in which we shall combine, more or less, with the service, the
scheming, the utilitarian. Yet as, by good good luck—our good be-
gins. The Righthearted, heavy-judging student who in former days
merged into one of care, & responsibility, & anxiety. Upon this occasion
Mr. Kim, as it does, one of the class of our lives, & hence one of interest
to us all, that shall we say? I acknowledge by mind is exceedingly
impaired—not from any want of topics; the eye, as it wanders over
the extended range of medical literature, perceives them on every hand—
not from want of knowledge; look upon any topic that one would

be likely to select, are about us in profusion — but from the idea of
plagiarism which almost necessarily attaches itself to a young man, ^{without experiencing} writing
a dissertation upon any topic. Shall we speak of Fevers? What do we
know of fevers, except what the books tell us — & our professors, perhaps
after take an article of the Materia Medica, & consider it in relation to all
the theoretical indications which it is capable of fulfilling; in relation
to all the combinations into which it is capable of entering; in re-
lation to its modified effects when in combination; it would only raise
the value of our copy of Pereira, & our faculty of making, not perhaps, much
else out of nothing, in a short story, much longer than necessary.
If the fact of our having previously had some experimental knowledge
of Pleurisy, turn our thoughts in that direction, we suddenly find
our own results, brilliant as we once thought them, completely sham-
ed by the effulgence of the elements when in the hands of the fathers
of American Science. Superior to Surgery & our experience is still
more limited — we may have seen many operations, but our own prac-
tice, extends at best, hardly, at resection of the arm, the ex-
traction of a tooth, the removal of a splinter from the finger
of a child. Although we might detail with accuracy, every procedure
to be taken in a capital operation, yet a string of originality
would be wanting & no criteria would be afforded of our possessing that
higher order knowledge requisite in forming new that operation

should be performed. In Anatomy, we can learn discovered as well things - we have not even seen all that others describe; so that for some time to come, we shall have to be satisfied with the idea, that our most careful dissections, will only reveal to us what has been time & again minutely recorded by others.

While some thoughts were passing through my mind, it occurred to me, that a notice of some of the difficulties of the Study of Medicine, would not be unwelcome in interest. And I cannot flatter myself that a single thing I have said, has not often occurred to each one of you.

To one just commencing the Study of Medicine, there appears a perplexing diversity of objects to which he must give his attention. He knows he must obtain an accurate knowledge of the structure of Man - of the functions of the various organs of his system - of the nature and kinds of his diseases - of the materials with which, & modes in which these diseases must be met; but it is only after he has individualized his attention, that he perceives the magnitude of the task he has undertaken.

If anatomy first employs his time, he finds several distinct systems, each requiring long-continued study - the osseous, the muscular, the vascular, the nervous - all equally necessary to life, & a knowledge of each of which, equally necessary to the successful practice of his art.

in the same system, he finds a great variety of sinuosities & crurae for the transmission of veins, nerves & arteries - of articulating surfaces, admitting various & complicated motions - of processes, tubercles & excrescences for the attachment of tendons, ligaments & cartilages - each one of these sinuosities, crurae, processes, tubercles & articulating surfaces, having a particular name, & description, & also having certain definite relations to other parts, both near & remote.

In the Circulatory system, he finds several hundred muscles, the origin insertion & uses of which he is expected to learn - but as for remembering them, I leave the authority of one who ought to know, for saying that "I presume none of you will be guilty of doing that, at least for any great length of time". (Prof. Hooker, M.D. Univ. Prof. Yale Coll.) Many means certainly have been devised, to render ~~the~~ Myology easy of apprehension & retention - Names indicative of function, & position of connection, have been applied. But notwithstanding all efforts at simplification, the whole subject is undoubtedly a difficult one - the port aditorem of Medical Students.

Next is the vascular system, with its arterial, venous, & lymphatic divisions - not as difficult as the preceding, but still requiring diligent study if one would master it in all its parts. Reading their description over - seeing them demonstrated over, will not suffice. A careful, actual examination, as our hands guiding the scalpel, is the

thing required - He who hopes to succeed without this will find his
hopes fallacious.

There is no need that I refer to the blood system - to the great organs of
the body - the Thoracic, Abdominal & Pelvic viscera. I am aware that
^{this} slight notice of some of the topics of anatomy, is not the surest
way of impressing upon the minds of those unacquainted with
it, the fact that it requires a vast amount of labor; but the
bare mention of these leading points, will bring vividly to your
minds, the long & tedious months you have spent in acquiring the
details of so intricate a structure - which acquisition, is after
all, merely a preliminary, but all-important step in our course.
The next step is one which the student commonly considers, &
justly, as having a more immediate relation to his profession -
namely: the acquisition of the knowledge of the various forms of
disease, of the various effects produced by it, & of the various modes
of removing it.

If I found difficulty in anatomy, I find it in the Principles
& Practice of Medicine & Surgery, aggravated in a tenfold degree. He
reads of a thousand different diseases, each with a long array
of symptoms - of symptoms which in one point to a precise patho-
logical state, but in another to a condition precisely opposite. This
not my purpose to speak of the labor of making a complete pathological in-

times; but I may speak of what constantly harassed us in our studies — it is
that; shall we be able to recognize any particular disorder when we are summoned to the
bed-side? There are so many diseases which simulate each other in important particulars:
so many, of which a description, however elaborate, conveys no definite idea: so many
which assume different forms, according to a prevailing diathesis, that we cannot
avoid feeling that an essential part of our instruction, is not to be derived from
the schools, or systematic treatises, but from amid scenes of distress & suffering; to be
acquired, too, at the very moment when it is necessary to possess the knowledge we need.
It is this which produces in us a feeling of dread upon entering our profession. How-
ever much we may have read, however deeply we may have reflected, however
well prepared we may be, in the estimation of those who are to pass judgement
upon us, we are still conscious, that this essential part of our instruction, can
only be derived from the opportunities which an indulgent community may afford
us. You all remember the beautiful illustration of a professor in one of the London
schools — "A man may master the science of Astronomy — may acquire the power
to work upon paper, its sublimities, its most abstruse problems, & yet remain
in complete ignorance of the method of adjusting a telescope, & unable to as-
certain for himself, the position or movements of a single star. But place such
a man, night after night, in an observatory — let him notice & imitate some
one already skilled in examining the phenomena of the heavens, & he will soon
acquire the requisite skill & facility himself. So in our own profession — it is in
the wards of the Hospital or in the domestic chambers, it is among the sick and

dying, & then alone, that we can either thoroughly or safely learn to practice
Physic". (Walton's Practice.)

But let us suppose, technically speaking, we have acquired
our profession, & entered upon its practice. We know the trial of a con-
scientious physician. As he enters the abode of the invalid, he perceives the
eyes of anxious friends fixed upon him as their only help. He enters
at once into their feelings, & makes a careful examination of the
case before him. He brings the powers of his intellect to bear upon it, &
perceives it beyond the reach of remedy. Now shall he break intelligence
that will tear open the fountains of the heart, that will cause fond affec-
tion to weep tears of bitter anguish in secret! And when the mute
eyes of the gentle sufferer turn imploringly towards him for a slight
ray of hope, & none is afforded, how shall he bear the look of an-
guish which he meets! Ah! how much must he be for the high char-
acter of his profession, if he cannot, at this trying moment, apply a
soothing balm to the crushed spirit, & kindly, tenderly, cheer it
heavenward!

I will not speak of the numerous petty annoyances we must daily
meet. Let us ride above them; let us think, at such times, of the dig-
nity of our calling; let us love it for the good it confers upon man, & not
for the honor it confers on us. Let a kind & affectionate address, be
combined with decision of character & integrity of heart. Let general

intelligence be combined with a thorough knowledge of these subjects
which peculiarly appertain to us. Without these things, & especially
without the last, we do not determine success. Chastetism & ignorance
may assume a brazen impudence & carry all by storm—but the Homely
adage applies with peculiar force here—"Man, like water, will find his
level." Conceal incapacity as you may, with loud-sounding pretension, or
with admissions of a rival's superior talents or skill, it will finally
appear. He all cannot conceal his ebb, however carefully he may. He
is "putted a lion" his lesson, the veritable approach of the King of Beasts.
So with a ability; covered, it may in by a return & diffident deportment, occa-
sion will arise, when it will be only apparent, perhaps, inostenta-
tiously, but effectually. And when this ability is perceived, then comes the
revelation of long & slender tail—it comes in the form of silver & gold—it
comes in a form far dearer to the heart of man—the confidence, the
redoubt, the esteem of the community in which he lives. Few of us will
make the city our place of residence; most will seek a quiet country life; a
few will go, not only to the "back-woods," but beyond them, to the Road, those
very meadows of the West but wherever we go, let us be noted for our
moral, intellectual, & scientific attainments. In these respects, we ought
certainly to be ranked among the very first in our Society. Think of
the other denizens of the wilderness, can at all compare with ours, in respect to
the "basic talents" requisite for success: by the way, or the Divine re-

gives an intimate knowledge of the human heart, of the working of human passions, of the influences which repress or excite them, how much more important is such knowledge to a medical man! The moral treatment of his patients, it always an important part of, & often the only treatment to the Divine required to be a man "of large benevolence." He does not know, that but one half of a physician's time & labor, is given without hope of reward, only as he receives it in the gratitude of the recipients of his bounty! But often he receives not that—often has he given his anxious attendance upon indigence—the case has been his latest case at night—his earliest morning thought & in return, he has received the unceremonious shaft of calumny! But let some fell contagion visit that Route! How you may see the benevolence, combined with that "unobtrusive but bold courage" which a physician is so often called upon to display. Think you, a paltry dollar here, would send him to that Route, pregnant with danger, perhaps death to all who enter it? No! Gentlemen! There are higher considerations—his reward is one of mercy, not of gain. Indeed it has come to pass, that from the almost universal praise of this virtue in the clergy, we naturally expect to see it in him, & it excites no remark. How different is it with the minister or the lawyer! An act of kindness performed by either of them, is appreciated, & the same itself is spread abroad. But I will not multiply comparisons which may seem irrelevant. I will only say, that "the claim of no pre-eminence over

Law & Theology, on account of the more extensive & varied Reading which
constituted the mental endowment of a well educated Medical Man is amply
sustained by an appeal to the facts, that the combined efforts of nine tenths of the
intelligent body, are in our favour. Let us never disappoint their expect-
ations, by our own indispensable indolence.

But it becoms me not to be tedious, for they more & more patients will
be no longer tardy. It is but natural that I speak of our associations for the
past four months. They have been pleasant throughout no jealous, discordant
elements have been permitted a place among us - nothing has transpired
of which we shall look back with other feelings than those of satisfaction.
Reading recollections of the kindness that has been shown us, will attend
us through life.

To the beautiful City - to its intellectual, its fair inhabitants,
our most kind adieu. To each other - an affectionate

Farewell.





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